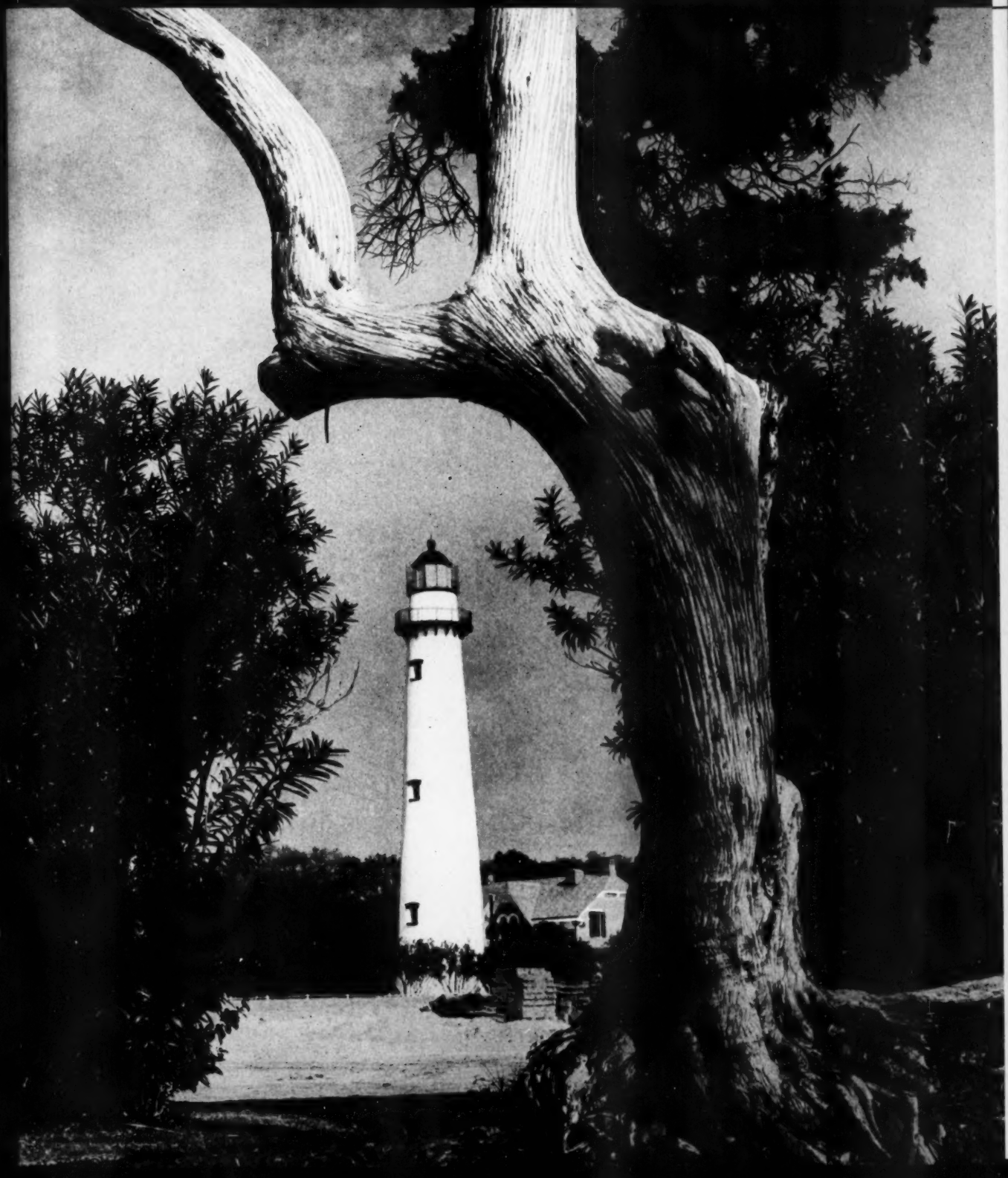
FORESTS



OUR MARINES' LIFELINE to the sea was in danger. A Communist force of 4,000 men had seized the key hill overlooking Hagaru-ri in the desperate Chosin Reservoir fighting. The hill had to be taken. But there were no combat forces available to make the fight.

Lieutenant Colonel Myers, then a major, rallied together clerks, cooks, and other service personnel, and led a makeshift unit of 250 men in an assault up the snow-covered 600-foot hill. Lacking combat officers and non-coms, Colonel Myers ranged the entire attacking front, leading his outnumbered forces upward in the face of murderous fire concentrated on him. After 14 hours of bitter struggle, the enemy was routed, the hill captured, and the route to the sea secured. Colonel Myers says:

"When a handful of men can help turn the tide of history, just think of the invincible strength of 150 million people working toward a common goal—a secure America! That's what you, and millions of people like you, are accomplishing with your successful 50-billion-dollar investment in United States Defense Bonds.

"Peace doesn't just happen—it requires work. Our troops in Korea are doing their part of the job. You're doing yours when you buy United States Defense Bonds. Together, we can hammer out the peace we're all working for."

* * *

Now E Bonds earn more! 1) All Series E Bonds bought after May 1, 1952 average 3% interest, compounded semiannually! Interest now starts after 6 months and is higher in the early years. 2) *All maturing E Bonds* automatically go on earning *after maturity*—and at the new higher interest! Today, start investing in better-paying Series E Bonds through the Payroll Savings Plan where you work or the Bond-A-Month Plan where you bank!

Lt. Colonel Reginald R. Myers, USMC Medal of Honor

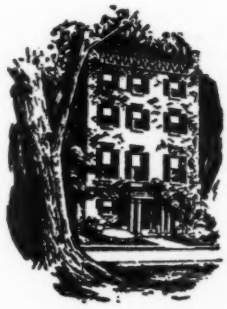
Peace is for the strong! For peace and prosperity save with U.S. Defense Bonds!

The U.S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.

VOLUME 58
NUMBER 7
JULY, 1952

American FORESTS

PUBLISHED BY THE AMERICAN FORESTRY ASSOCIATION



The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

CONTENTS

Cover

Since 1804, sailors have watched for the faithful beam from this historic lighthouse on St. Simon Island to guide them through the sound into the port of Brunswick, Georgia. The present structure, rebuilt in 1871, provided more than a beam for photographer Louis C. Williams. And we may see it as he did, framed by a bowed cypress, picturesquely gnarled and weathered by time and the elements. Because of its durability, cypress was a favorite of early settlers in this area for building their homes. Many cypress-built houses still dot the coastal landscapes today.

AMERICAN FORESTS is published monthly by The American Forestry Association at 919 Seventeenth Street, N. W., Washington 6, D. C. Subscription price $5 a year. Editors are not responsible for loss or injury of manuscripts and photographs while in their possession or in transit. The Editors are not responsible for views expressed in signed articles. Entered as second-class matter at the Postoffice at Washington, D. C., under the Act of March 3, 1879. Acceptable for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918. Additional entry at Baltimore, Maryland, December 29, 1931.

American FORESTS Forum

Looking Ahead—Circumstances will happily permit a four-color cover scene of a birch lined Vermont lake for your forthcoming August issue, and inside you'll find a variety and quality of reading and pictorial material to please the most fastidious. The staff has been keeping an eye on the controversy over the fate of New York State's hallowed forest preserve and will pass on the crux of the issue to you in *Forever Wild?* It's a subject in which The American Forestry Association has played a major role since its inception.

Have you ever wondered what makes a forest fire fighter tick, or if you've ever fought fires, have you ever wished you could express your feelings on the subject adequately? In either case, you'll find EDWIN RULES' *Incident on Dirty Shirt Peak* an unforgettable and haunting experience in spreading before you on a printed page aching muscles, sweat, grime, heartache, yes, a soul. This is no work of a professional writer, but we haven't tampered with it for fear we'd spoil the power of his message.

An extra special piece of fiction, comparable with stories featured in the nation's really big magazines, is also being offered by VINCENT PARADIS, Massachusetts author. It's titled, *The Bait Had Red Hair.* You'll get a chuckle, too, out of going *Through Yellowstone With a Pessimist*, written by NELLIE PARKER. And whether or not you plan to attend the Association's 77th annual meeting in Asheville, North Carolina (October 12-15), you'll find the *Great Smoky Mountains* interesting. For the anglers, RAY HOGAN offers bait for the hook with *Fishermen Have No Rights*, and there are the always reliable shade tree and woodland management features.

Among Our Authors—Authoritative is the word for *National Forests Are in the Black* (page 6). The article was written by C. M. GRANGER, veteran of 45 years in the U.S. Forest Service and from 1935 until his retirement last January 30 an assistant chief in charge of national forest administration. *Forestry Education in North Carolina* (page 10) is by WADE LUCAS, in charge of public relations for the North Carolina Forest Service. CARLOS VINSON, author of *Brim Sniffing is an Art* (page 18), is a Tennesseean whose by-line is a byword in many outdoor magazines. DONALD CULROSS PEATTIE of Santa Barbara, California offers in *Sweet Acacia* (page 20) another chapter from his forthcoming newest book, *A Natural History of Western Trees*, due off the press sometime this fall. Supplier of the excellent accompanying photo is neighbor JOSEF MUENCH, one of America's better known photographers, who is currently visiting his native Bavaria from whence he emigrated 24 years ago. NELSON C. BROWN, retired professor from New York State College of Forestry at Syracuse and author of many books on forestry, wrote *The King's Arrow Pine* (page 22). CHARLES CADIEUX, editor of *North Dakota Outdoors*, takes us on a delightful tour of his backyard in *These Are Bad Lands* (page 26).

Our Readers Say—A recent AFA membership promotion effort revolving around packets of redwood tree seed which the recipients might plant and/or send to friends who might wish to join resulted in the following letter from Anthony Wayne Smith, District of Columbia attorney at law who has as one of his clients the Congress of Industrial Organizations. A rebuttal to the issues aired here by Attorney Smith will be forthcoming from the California Redwood Association in the August issue.

Recently I received application blanks for membership in the AFA together with packets of redwood seed.

I would feel much happier, as a member of AFA, and might be more inclined to go after new members, if I thought the organization was doing anything about the redwood problem.

The Forest Service made a study of the Coast Redwood belt in 1946 and concluded that if current commercial cutting practices continued, the life of the forest was limited to about 50 years; production would then largely collapse, and with it the economy of the entire region.

On the other hand the Service concluded that the redwoods could be harvested selectively, and that if this were done the current harvesting rates could be maintained and increased; the forest could operate on that basis forever.

The timber industry contended, and apparently still contends, that redwood cannot be harvested selectively.

It looked to many of us like a clear case for an extension of the National Forest System.

Representative Douglas of California had introduced legislation, co-sponsored by about one-half the California delegation in the House, providing for public purchase of the redwood belt and establishment of a national forest. The existing state parks system would be enlarged, to preserve the monumental groves.

This legislation had very wide and solid support from farm and labor organizations, conservation groups, government agencies, and political leaders, including Gifford Pinchot. What was needed was aggressive action by the AFA to tie the work of these groups together and bring it to bear on Capitol Hill.

I mentioned this legislation publicly to the Forest Congress called by the AFA in 1946. The Association never indicated the slightest interest. It seems to me that this proposal ought to be revived, and that this would be a much better idea than merely distributing a few packets of seeds, nice as that may be.

I would like to get some discussion on this subject among my fellow members of the AFA.

From Elmer L. Surdam, manager of National Forest Industries Communications, which has its headquarters at Eugene, Oregon comes:

The article on "Logging With Radio Beams" by Albert Arnst (April issue) certainly tells a vivid story of the gradual progress taking place in forest industries. The illlustrations gave a clear idea of the use and setting for a forest radio system. To most operators and the average layman it is an enigma.

Your interest in giving the space to beam the story of the industry's progress in this field is much appreciated by the radio committee.

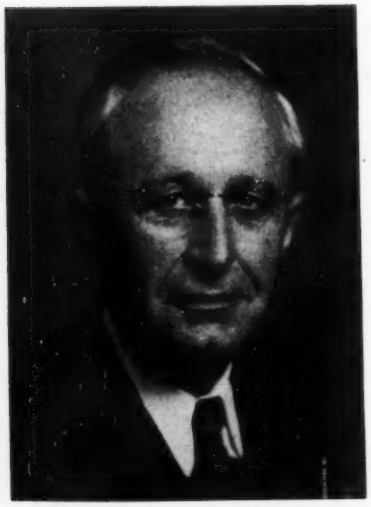
It seems there's an inexhaustible harvest of comment still to be reaped anent "The Utility Line Problem" which was featured on the *Your Shade Trees* page way last December. Writes Dick Potter of Marysville, California:

As far as "The Utility Line Problem" went, i.e., setting trees back from the wires or judicious pruning, the article covered the field. But the problem of Shade Trees versus Utilities and modern methods of solving this planting problem was not even mentioned.

The article did not hint at the possible selection of low flat topped varieties, or short globe headed species, to say nothing of the columnar types. Clonal grafts of regular street trees with various shape characteristics have been developed by leading arboriculturists, as well as lists compiled of native and exotic species that will not reach up into the wires and of

(*Turn to page* 40)

R. E. McArdle is new U.S. Chief Forester as Lyle F. Watts retires



Lyle F. Watts . . . retiring

R. E. McArdle . . . incoming

Richard E. McArdle on July 1 became the new chief of the U. S. Forest Service. He succeeds Lyle F. Watts, who retired June 30 after nearly 40 years of public service, the last nine of which have been as Forest Service Chief.

In announcing the change in top command, Secretary of Agriculture Charles F. Brannan praised Mr. Watts as "one of the most effective and courageous leaders of the Forest Service in the great tradition of its service to the American people.

"Under his guidance forestry has taken a much greater part in the agricultural resources conservation program and has become an essential part of American agriculture. His other associates and I will miss Lyle Watts very much, but we are pleased at the prospects of having his advice and counsel readily available during his well-earned retirement," the Secretary said.

A career government forester, Mr. McArdle has been a member of the Forest Service for more than 25 years. Since 1944 he has served as assistant chief in charge of cooperative forestry programs. Under his leadership, the federal programs carried on in cooperation with the states to encourage and facilitate the protection and sound management of the country's forests have been greatly accelerated.

The retiring Chief worked his way up through the ranks to the nation's top forestry position from a start as fire guard in a western national forest. Prior to his appointment as chief forester, Mr. Watts' forestry career included service in four of the ten national forest regions, two of which he headed as U. S. regional forester. He also spent several years in research work, including five years as director of a forest experiment station. He was the organizer and first head of the school of forestry at Utah State Agricultural College.

In recognition of his outstanding public service, Mr. Watts in 1950 received the Department of Agriculture's distinguished service award "for distinguished and effective leadership in advancing the conservation of forest resources in the United States and internationally." Mr. Watts is chairman of the standing advisory committee on forestry of the United Nations Food and Agricultural Organization. Iowa State College has conferred on him an honorary Doctor's degree and its Alumni Merit Award. He is a fellow of the Society of American Foresters.

Mr. McArdle recently has been active in the federal-state cooperative fire control program. The area of state and private forest land under organized protection from fire now totals more than 360 million acres, and since 1944 the area that still lacks such protection has been reduced by some 60 million acres.

Mr. McArdle's earlier governmental forestry service included the directorship of two regional forest experiment stations, where he conducted important research work on fire control and on timber growth and yield. During a year's absence from the Forest Service in 1934-35 he served as dean of the University of Idaho's school of forestry. He served overseas with the army during World War I.

He entered the Forest Service as a junior forester in 1924 and was assigned to the Pacific Northwest Forest and Range Experiment Station.

Mr. McArdle becomes the seventh to guide the destinies of the U. S. Forest Service since Gifford Pinchot became its first full fledged chief in 1905. Following in order were Henry S. Graves, Colonel William B. Greeley, Major R. Y. Stuart, F. A. Silcox and Lyle F. Watts. Earle H. Clapp served in an acting capacity for a brief period between the sudden death of Mr. Silcox and the appointment of Mr. Watts.

THE AMERICAN FORESTRY ASSOCIATION

919 SEVENTEENTH STREET, N. W., WASHINGTON 6, D. C.

Office of the President

Dear Fellow Members:

Some of us are "joiners".

Most of us are supporters.

You will agree, there is a great difference. Let us look at it in the eyes of your American Forestry Association. Most Americans react to "propositions", and responsibilities, much as do people of other lands—whether they live by their wits or by their brawn. "Joining" is a characteristic over which no country seems to have a monopoly, probably our own the least of many. Here in America, joining is on a voluntary basis and not many other people can say that.

As a member of the Association, you are part of an organization of proven, devoted public service. However, this affiliation becomes valuable support only if continued through the years. Now here is our point: Short term memberships are wasteful and expensive—to you and to all the rest of us—particularly so when born of any motive other than genuine interest and a desire to help in forest conservation and its relation to soil, water, climate, wildlife, recreation, etc.

Last month I mentioned some of our activities which have been successful and made possible only because of the prompt payment of your membership dues. Unless more of our projects and programs are carried through to completion this land of ours could well be faced with some conservation problems of serious proportions in the not too distant future.

This and future issues of AMERICAN FORESTS are designed to keep you posted regarding conservation progress. I hope you will read your copy carefully and I shall attempt to keep you advised regarding important projects to which your Association has obligated itself. Only if the thousands of friends and supporters of the Association continue their active interest in helping to solve these problems, can your organization do its job well.

Let us hope all our "joiners" will become active, interested supporters!

More later,

DON P. JOHNSTON
President

DPJ/kk

P. S. Remember, this is your forestry association. The Washington office was opened so as to carry out your wishes. The Staff is anxious to serve you. Let it know what you expect it to do.—DJP.

Custodians of Uncle Sam's forests can boast not only a balanced budget but a cash surplus as well. Receipts last year topped the 57-million-dollar mark and the target for fiscal '52 is a whopping 70 million dollars

THE NATIONAL FORESTS ARE IN THE BLACK

Huge logs like these help swell the national forest coffers

By C. M. GRANGER

ABOUT ten years ago Raphael Zon, one of the real sages of forestry, was visiting my office. We were discussing the revenue-producing business of the national forests. At that time the income was between five and six million dollars a year. Zon, always a man to set high goals, said, "You ought to set your sights on 50 million dollars a year and see how fast you can build up the income to that level."

In those days of relatively low timber cut and stumpage values Zon's figure seemed pretty visionary. The march of events, however, proved that he was no idle dreamer. In fiscal year 1951 the gross receipts from the national forests totaled more than 57 million dollars. This was a jump from the year before from 33½ million dollars.

So far in fiscal year 1952 receipts are running about 35 percent ahead of 1951. This level of increase may not be maintained until the end of the year, but it seems reasonably safe to forecast receipts of between 60 and 70 million dollars.

Some persons critical or skeptical of the benefits of government ownership of forest lands have in the past pointed out that the national forests were operating in the red. They can no longer claim this. For fiscal year 1951 the gross income exceeded all expenses—slightly less than 56 million dollars—for protection, management, and capital investments. (See chart.)

SO FAR IN '52 — National forest receipts increased $13,721,552, or about 36 percent, for the first three quarters of fiscal year 1952. As of March 31, gross income totaled $51,013 as compared with $37,292,130 for a year ago, according to latest figures released by the U.S. Forest Service.

Approximately 95 percent of the receipts were from the sale of timber and related products. The remainder was collected for the grazing of cattle, sheep and horses and the occupancy of lands for resorts, camps, summer home sites, rights-of-way and power sites.

Actually, this comparison gives the national forest managers the worst of it because no business concern would charge all its capital investments against the current year's income.

Of course, those wishing to belittle this achievement can correctly point out that 25 percent of the income is paid to the states for the benefit of roads and schools in the counties located in the national forests. This, however, is a question of what Uncle Sam chooses to do with his income and does not diminish the significance of the large increase in revenues.

Before going farther, let it be stated that the attainment of high levels of income, important as that is, is not the primary purpose of national forest managers. Neither is it the predominant measure of successful management.

The aim of those who are responsible for the national forests is to make them produce the maximum quantity of products and services for the benefit of dependent communities and the nation as a whole. That is the best measure of their value.

This build-up in national forest revenues has by no means come entirely from timber customers coming to the Forest Service voluntarily for additional timber purchases, nor from the general and continuing rise in stump-

USFS photos

This stand of white pine in Idaho is but a part of the more than 80 million acres that make up Uncle Sam's forests

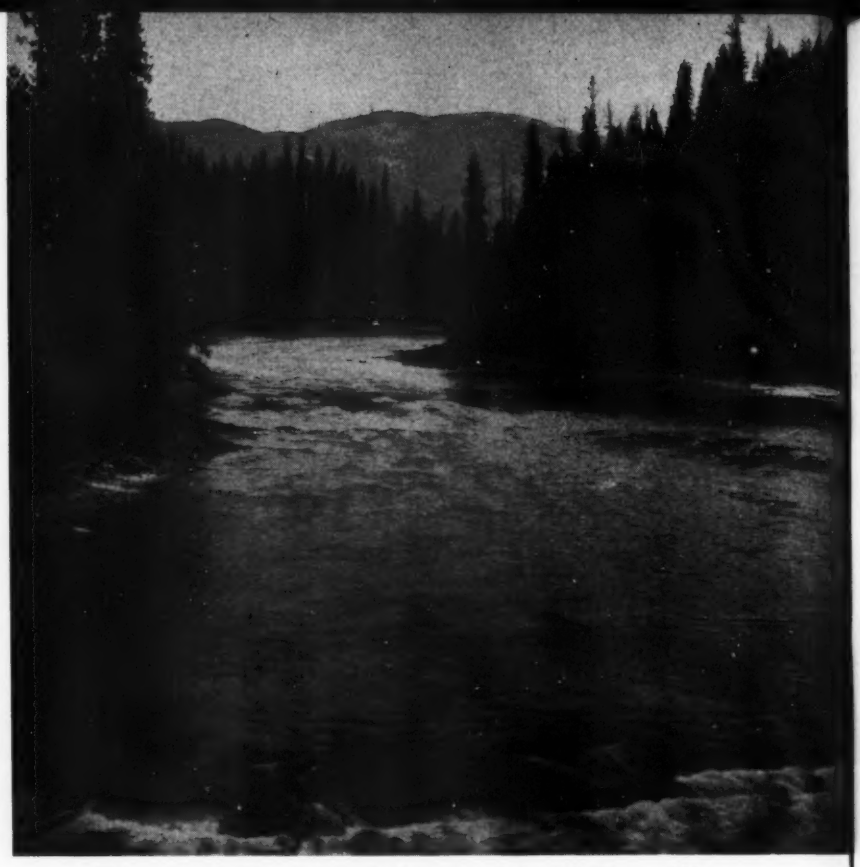
age values of all timber. A lot of it is due to the initiative of Forest Service men in going out and getting business.

Let's take our southern national forests as an example. These were built up almost entirely from purchases under the Weeks Law. For the most part, the lands bought had been heavily cut over with very little residual merchantable timber values.

However, they had obvious possibilities. One of the first to recognize the full extent of these possibilities was Joe Kircher, long time regional forester in the Southern Region. He made it his personal job to stimulate forest supervisors and forest rangers to be active land managers. He insisted that they prepare timber management plans and adopt an aggressive program of offering timber for sale, not alone to build up revenues, but to put the lands in the best possible growing condition.

One day Kircher was traveling with a ranger. They came to a railroad siding where some posts were stacked for shipment. Kircher asked the ranger if any of them came from his district. The reply was negative. Kircher said "I want you to see what you can do about making some post sales. A lot of your timber stands need thinning and here's a fine chance to improve the stands and get some revenue coming in."

That was typical of Kircher's methods. His staff followed his leadership. The results are striking. In the last ten years the annual timber cut from the national forests in the Southern Region has increased from 176,157,000 board feet to 486,437,000 board feet. The yearly receipts from these timber sales have jumped from $1,158,512 to $7,423,149.



The most valuable product of the national forest? Water—300 million dollars worth a year. Scene, Idaho's Clearwater River

On a wider front, some years ago, the chief of the Forest Service told his regional foresters that he wanted every working circle on the national forests put under active management and operation just as fast as reasonably dependable management plans could be turned out and sales of timber started.

This program has been aggressively pushed. One of the notable examples is in Region 6—Oregon and Washington. Here, in the last ten years, through a combination of aggressive timber merchandising by the forest managers of the Forest Service, and the decreasing availability to many operators, of private stumpage, the annual timber cut has been raised from 861,636,000 board feet to 2,071,363,000 board feet with an increase in yearly timber sale receipts from $1,490,166 to $25,844,244.

Even so, the current rate of timber cutting on the national forests, approximately four and three-fourths billion feet a year, could be safely increased to six billion feet a year under sustained yield if there were enough access roads. Ultimately it is hoped, through more intensive forestry, to step up the cut to ten billion feet a year.

While it is obvious that the great bulk of national forest revenue comes from timber, forest managers have been alert to other means of increasing income. A sliding scale, put into effect some years ago, keeps grazing fees in line with the market price of livestock in the west, and grazing re-

ACTIVITY	CAPITAL INVESTMENT	PROTECTION, OPERATION & MAINTENANCE	TOTAL
General operation, development, fire prevention and presuppression	$2,394,536	$25,067,326	$27,461,862
Fighting forest fires		6,211,377	6,211,377
Flood control (N.F. lands)	306,124	289,876	596,000
Control of insects and diseases		4,805,954	4,805,954
Construction and maintenance of roads and trails	7,375,995	8,659,304	16,035,299
Cooperative range improvements	194,997	273,662	468,659
Acquisition of land	389,384		389,384
TOTAL	$10,661,036	$45,307,499	$55,968,535

ceipts have increased in the last ten years from $1,429,091 to $4,165,573. If the base fee were readjusted to correspond to the present true commercial value of forage, these receipts would be two or three times as much.

During the period before the Forest Service transferred administration of oil and gas leases on acquired national forest lands to the Bureau of Land Management of the Department of the Interior, we had in effect a bonus system of bidding for oil leases. These bonuses yielded $2,615,000 within a period of three years, in addition to the usual royalty and land rental.

Last year the system of charging fees for the use of national forest lands for resorts and similar uses was revised to base the fee on a percentage of the gross income. While this has not produced large increased returns, it is a more business-like way of handling this source of revenue.

A good many things have been done to make the Forest Service expenditure dollar go further. For example, collections from states and owners of private lands within the national forests for giving their land fire protection have, during the last ten years, increased from $340,544 to $1,051,556. The Forest Service has persuaded counties or states to take over $1,500,000 of the annual bill for national forest road maintenance.

More than $390,000 a year in cooperative funds or services have been received from various local public and private agencies toward operating our recreational facilities. Charging fees on some of our camp grounds and having some of them handled by concessionaires has recently been tried out in a small way. This relieves the Forest Service of administration and maintenance expenses. Some states are sharing hunting license fees on specified areas with the Forest Service for improving wildlife ranges.

In timber sale work, scaling costs have been reduced in the Pacific Northwest by accepting the returns from association scaling which the purchaser has to have for his own purposes. Making sales by tree measurements instead of subsequently scaling the logs also has proved beneficial. And many, many field men have been putting in heavy overtime —uncompensated—to handle the rapidly growing timber sale business.

What of the future? There will, perhaps, be ups and downs in revenues depending upon changes in the general economic conditions, but with the growing dependence on national forest timber and the increasingly intensive use of other resources, it is reasonable to assume that the trend will continue upward.

The actual cash revenues from the national forests fall far short of representing their true revenue-producing capacities and values. A study made in 1948 shows that direct and indirect annual returns from the national forests aggregate about 430 million dollars a year. Here are the major components:

First, it is estimated that the fair market value of the water produced by the national forests and used for domestic, industrial, irrigation, power, and other purposes is more than 300 million dollars a year. A reasonable value placed on the 35 million man days of recreation use of the national forests, including hunting and fishing, is nearly 24 million dollars. The rest of the 430 million dollars, as calculated in 1948, is made up of annual receipts, then running only at the rate of 28½ million dollars, and a capital gain through increased growth and re-evaluation of timber inventory of 65 million dollars.

It is important to bear these indirect returns in mind. A considerable part of national forest areas does not produce commercial timber or forage. Therefore, it yields no direct revenue of any consequence. It is, however, of extremely high value for its water yield.

Take the southern California forests as an example. It is highly important to protect these areas from fire or other destructive agencies because of their watershed values. This is a factor that is either deliberately, or through oversight, not brought out by those critics who have in the past pointed out the adverse comparison between income and outgo. It is one of the functions of public ownership. This function is adequately supported by the indirect returns which have been alluded to above.

Doesn't it seem evident that Uncle Sam has been building up a pretty profitable investment in his national forests?

National forest range like this on the San Juan, Colorado, furnishes forage for nine million cattle and sheep a year

The Gifford Pinchot National Forest in Washington and others across the nation are favorite recreation spots for millions

The Tarheel state has come a long way since 1898 when Dr. C. A. Schenck established the Biltmore Forest School near Asheville

Forestry Education in North Carolina

Dr. C. A. Schenck, internationally-known "grand old man of forestry"

FORESTRY education has come a long way in North Carolina since Dr. Carl A. Schenck opened within its borders the Biltmore Forest School, which shares with Cornell the distinction of offering the first course in professional forestry instruction in the United States.

It was on September 1, 1898 that Dr. Schenck opened the Biltmore Forest School on the Vanderbilt Estate located in a suburb of Asheville, North Carolina, which on October 12 to 15 will be the scene of the 77th annual meeting of The American Forestry Association. Meeting jointly will be the North Carolina Forestry Association.

The seeds of forestry education that Dr. Schenck planted more than 50 years ago at Biltmore Forest School not only grew into life-sized trees, but they served to awaken North Carolina to its stake in its forests and forest lands. They also set in motion over the nation the type of instruction in forestry that has been highly successful in the conservation and development of these resources.

By WADE LUCAS

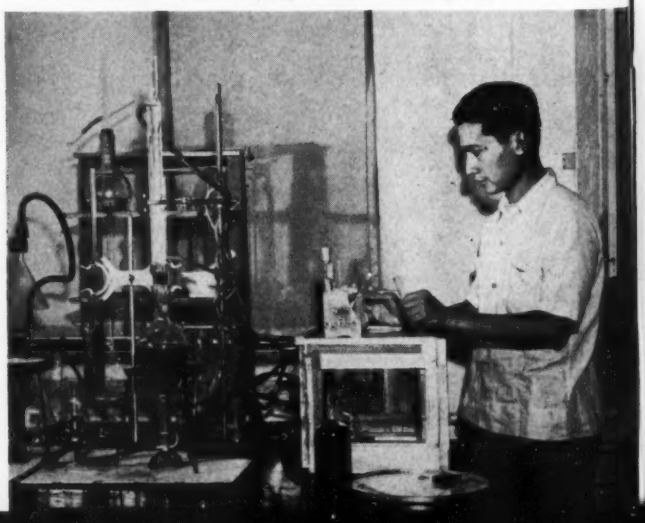
The Biltmore Forest School was discontinued in 1913, and it was not until 1929 that North Carolina State College at Raleigh began to offer instruction in forestry. Earlier, professional instruction in forestry had begun at the University of Georgia and at Louisiana State University.

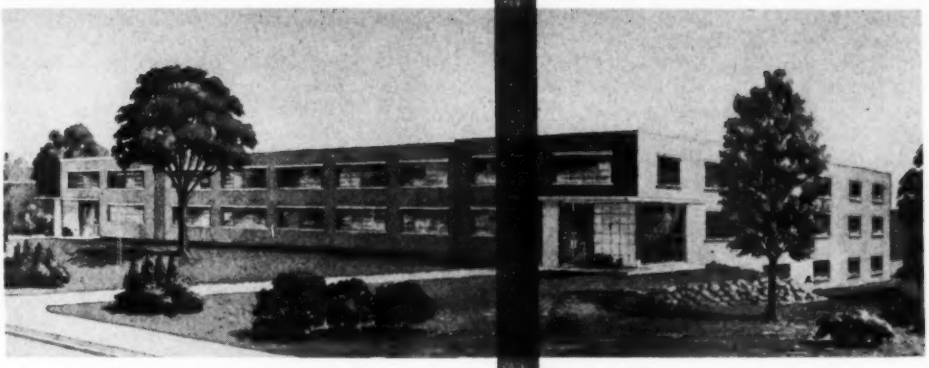
Today, North Carolina State College and Duke University at Durham have widely known schools of forestry, with Duke School of Forestry representing a pioneer venture in professional training for foresters. Established in 1938, with Dr. Clarence F. Korstian as dean, the School was the first in the United States to offer the professional Doctor of Forestry degree and is now one of the nation's two graduate schools of forestry where this degree can be obtained. The other is at Yale University.

The Duke School of Forestry also offers the Master of Forestry degree to graduates of recognized liberal arts colleges, scientific schools and professional schools of forestry. Also

Armed with bush axes, North Carolina State College students leave for day in the woods

Wood technology student at Duke studies chemical means of identifying various wood species





Architect's sketch of the $769,000 forestry-horticulture building nearing completion on NorthCarolina State College campus

the M.A. and Ph.D. degrees are available through the Duke Graduate School to qualified students in the more purely scientific branches of forestry.

Although the teaching of forestry was first begun at North Carolina State College in 1929, it was not until 1950 that this division became a full fledged school of forestry, with Dr. R. J. Preston as dean.

In the years that preceded the establishment of its school of forestry, North Carolina State College had, as a result of the teachings of Dr. J. V. Hofmann and his aides, acquired a wide reputation for the type of forestry instruction it was then offering. It is making itself felt even more today.

With its more than 18 million acres of forest lands, or about 59 percent of its total area, the State of North Carolina years ago began to recognize the stake it has in its forests and set about to do something to conserve and develop its forests and forest lands.

Through its Division of Forestry, an integral part of the North Carolina Department of Conservation and Development, its State Department of Public Instruction, and the forestry extension division at North Carolina State College, the state is constantly sending or taking the message of better forestry to the people who live in its 100 counties. This cooperative program has proven to be a good one and has produced excellent results from a forestry standpoint.

No history, however short or long it may be, of forestry education in North Carolina would be complete without mention of the long-time services rendered by J. S. Holmes, who served as state forester from 1915 to 1945. Now retired and living in Raleigh, Mr. Holmes is rightfully given

The 7700-acre Duke University forest provides setting for school's gothic campus. Arrow at right center indicates forestry building

credit for almost singlehandedly bringing forest conservation and development into sharp focus in North Carolina at a time when little or no attention was given to the subject.

As a matter of fact, Mr. Holmes, a graduate of Yale University School of Forestry, was North Carolina's first state forester. He began his forestry work in the state about 1907 and it was under his guidance and leadership that the present State Division of Forestry came into being and grew to such extent that today it is a well-knit organization providing help to land owners and promoting better forestry practices throughout North Carolina.

The present state forester is Fred H. Claridge, also a graduate of the Yale School of Forestry, who, except for a period during World War II, has been with the forestry division of the State Department of Conserva-

tion and Development since 1925. Mr. Claridge succeeded W. K. Beichler, a graduate of the Pennsylvania State College School of Forestry, in late 1951.

The School of Forestry at Duke University and the equally celebrated one at North Carolina State College annually attract many out-of-state students. Placement of graduates of these two schools in well-paying jobs is a comparatively easy matter. In fact, according to Dr. Preston at State College, wood-using industries as well as owners of large forest areas seem to be always ready to offer very good starting salaries to graduates of the State College School of Forestry.

Its graduates hold important forestry positions in many states and in a number of foreign countries. So great is the demand that this year there were three job openings for each graduate.

The widespread influence of the School of Forestry at Duke University, according to Dean Korstian, is indicated by the distribution of its graduates, who now hold positions in 33 states, Canada, Mexico, Nicaragua, the Dominican Republic, South Africa and China.

Both Duke and State have fully equipped laboratories for carrying on work in wood technology, forest soils, seasoning and preservation of wood, forest entomology, and other fields of study.

Duke prides itself—and justifiably so—on its Duke Forest, 7700 acres of wooded land that is located a short distance from the school itself. The proximity of the forest also eliminates much administrative expense, and the money thus saved is used to advantage in professional training.

More than 100 different species of trees are found in or near Duke Forest, and there is little land of low timber productivity. An arboretum is now being developed to serve as a cultural center where foresters, landscape architects, nurserymen and the public may become acquainted with native trees and with foreign species that can be grown in the North Carolina Piedmont region.

The Duke Forest as a laboratory is supplemented by an arrangement with the West Virginia Pulp and Paper Company. This company opens its South Carolina holdings, where active growing and milling operations are carried on, to classes in forest utilization, forest soils, silvicultures, and forest management. The School maintains a field headquarters on the company's property for use as a spring camp.

Dean Korstian says the practical business of marketing and using timber products, over and above the Duke Forest operations, is an important phase of the Forest School work. With the assistance of the General Education Board, Duke forestry professors initiated the experiment of organizing the sale of small lots of forest products through the Farmers' Mutual, Inc., operating in five North Carolina counties.

In addition, the School's many research projects include the development and use of seed tree, strip, and "patch cutting" as methods of natural reproduction of pine stands; a method for finding out whether or not barren soil areas give promise of good timber stands; ways to grow more profitable forests through research in keeping down damage from insect pests; study of tree diseases; statistical work on the rate of timber growth; and research in plywood and laminates, glueing, suitability of foreign woods for furniture and paint adhesion.

Enlarged programs of educational and research functions are now underway in the School of Forestry at North Carolina State College.

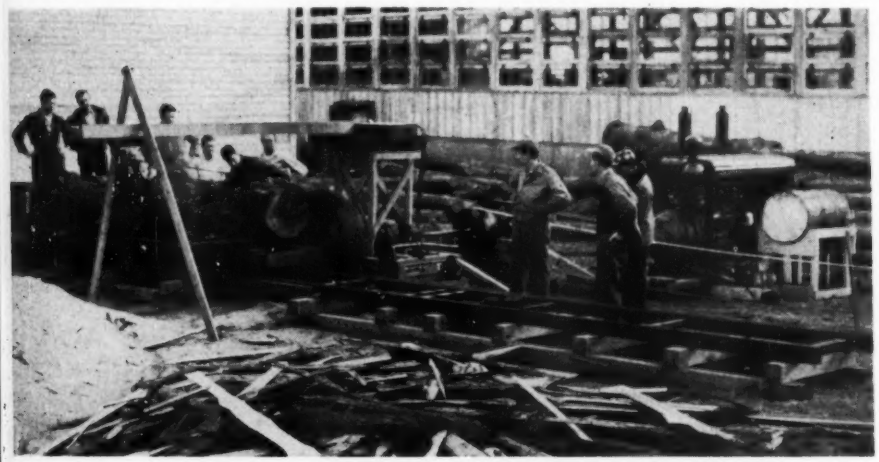
As North Carolina's and the Southeast's forests and forest industries grow in scope, the college's School of Forestry has decided to increase its services to meet the demands for its graduates and for its technical guidance.

Dean Preston said that the proposed objectives of the school call for more attention to such new fields as watershed development, forest genetics, and pulp technology.

To spearhead the enlarged program in pulp and paper manufacturing, the college has just named Prof. C. Earl Libby, head of the Department of Pulp and Paper Manufacture. College of Forestry, State University of New York, Syracuse, N. Y., who will join the faculty of North Carolina State College this summer and will head the curriculum in pulp and paper technology.

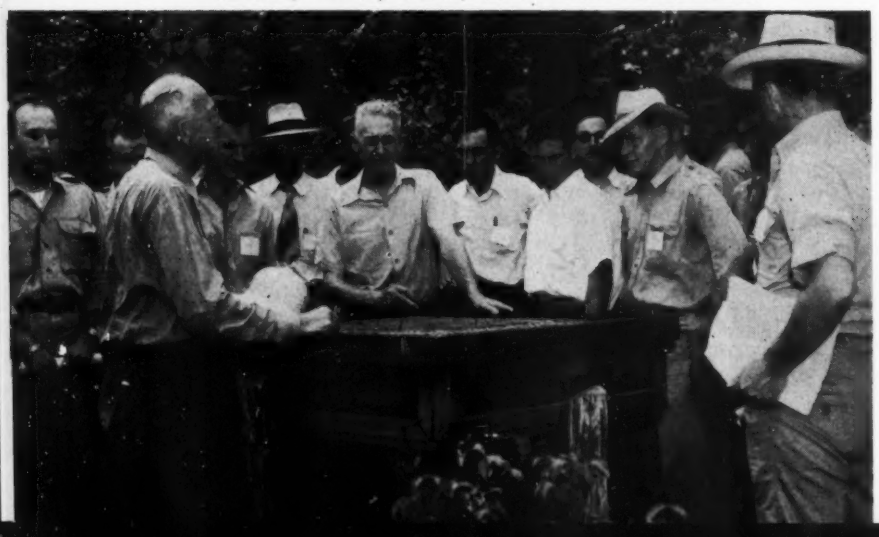
Expanding its physical facilities as well as its teaching and research personnel, the college is currently erect-

(*Turn to page* 36)



Forestry students at North Carolina State College operate a sawmill at the college's modern wood products laboratory

Clarence F. Korstian (second from left) dean of the Duke University forestry school, shows visitors around forest



Newest basic fire tool and ration units, designed for one, five or 25 men, are product of much experience

H. T. Wicklund, USFS mechanical engineer, explains new fire line trencher. It can be parachuted to scene

Protection on Parade

By ADRIAN ALLEN

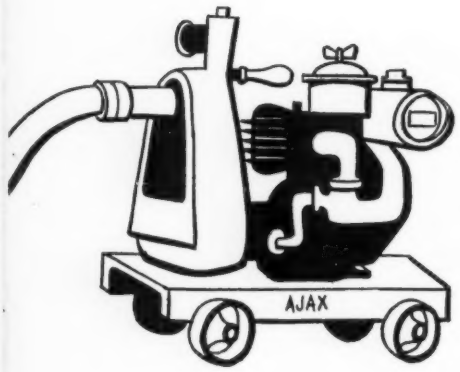
IN Missoula, Montana, the Society of American Foresters last spring sponsored a large public display of the latest forest-protecting equipment. Some of it was so new it had never been shown before. Most of it was equipment that has been proven and is in actual use; a few of the newest items are still experimental.

The display was divided into eight parts according to the function of the equipment: insect control, smoke jumping, weather measuring, communications, blister rust control, water pumping, camp and fire crew use, and equipment under development. Representatives from government services, manufacturers, and a private fire protective association explained the exhibits to visitors.

A flying saucer? No, just a disk-like rubber container which holds five gallons of drinking water. May be dropped without parachute

An experimental model. When this winged cargo container is dropped, the fiberboard wings hinge out and float it to the ground with a spinning motion. For small items

Jim's "angles" were pretty exasperating to his prospective father-in-law. But to Nephew Terence, who wanted an aunt, they promised freedom from dish washing



O'Flaherty

By WILLIAM L. TRYON

JIM O'FLAHERTY nudged Terence and winked mischievously as he watched Mr. McCormick walk up the narrow path from the road. Jim was always doing something to provoke his prospective father-in-law. He waited until Mr. McCormick was within hearing distance. Then he rested one bare foot on the porch rail, and sighted over his toes. "Bing!" he said pensively. And added, "See there, Terence? If I'd had a gun, I'd've got that rabbit."

Terence said, "Gee, Unc', some rabbit stew'd be might tasty."

Mr. McCormick frowned, and shook the rickety old porch as he stepped into it. Wiping his face with a fresh handkerchief, he eased himself onto a chair. "Dry, hot fall, isn't it?" he said. "Or maybe you wouldn't have noticed."

"Oh, I noticed alright," said Jim. "Been hoping for some rain same as the rest of you. But weather man says no—says there won't be any for a week or ten days yet."

Mr. McCormick stirred uneasily. "You been busy, Jim?" he asked. "We haven't seen you around much lately."

Jim grinned, and gave the other man a sidelong glance. "No busier than usual," he said. "Been sitting mostly. Had figured though on dropping over this afternoon to see Molly. Thought we might talk some more about getting married." He paused, looked at his big toe, inspected it carefully and said, "You still figure a fellow who works his brain is shiftless and lazy?"

Mr. McCormick snorted. "Now see here, Jim O'Flaherty," he snapped. "I have no use for a lazy man. I've said it before, and I'll keep right on saying it. On the other hand, I'm not a hard man to get along with. Soon as you decide to go to work, I'll think the matter over. As a matter of fact, I'm here now to offer you a job."

Sighing, Jim removed his foot from the rail. "Mr. McCormick," he said, "you want to hire my brains or my back? My brains are for hire."

Terence swallowed hard. Gee, Unc', he thought, that's no way to get me an aunt. Then he saw Mr. McCormick's face redden and a skim of ice form about his eyes. Terence swallowed again. Harder.

"Trying to outtalk and outsmart people ain't honest," spat Mr. McCormick. "No decent man lives by his wits, which is what you're trying to do. Right now I need a man to pump water up from the river to irrigate my melons. If they don't get water, I'll lose the crop, and I'm so busy at the mill just now I ain't got the time to work that handy-billy myself. I'm offering you 75 cents an hour, Jim."

Until ten days ago, Mr. McCormick hadn't a worry in the world. Aside from owning the largest farm in Cooper County he had controlling interest in the sawmill at Redford. But recently he had begun cutting a piece of virgin timber, and was finding it difficult to mill.

He had purchased the timber ten years before, not knowing at one time it had been the center of a furious battle between two rival companies. In attempting revenge, one company had had the timber "loaded." And now the nails and bits of barbed wire which had been driven deeply into the trees were costing Mr. McCormick a small fortune in damages to his big saws.

"Well, Jim," he said, "I'm waiting."

Jim scratched his head, and pretended to consider the offer with rancor. Why did people always suspect a man who used his brain? Why did they resent the money he made? Why did they infer there was something dishonest about it?

It was doubly hard that Mr. McCormick took the same stand. With Jim and Molly married, it followed that he and her father would team up. Molly thought it would be a wonderful combination. So did Jim. And Terence was all for it—especially since it would mean no more dishes for him to wash. However, Mr. McCormick thought otherwise, and he was an obstinate man and required a lot of convincing. Well, at least he was offering Jim another chance to prove his point.

The flaws in Mr. McCormick's present proposition were obvious. First, 75 cents an hour was the minimum

Makes a Deal

any laborer in Cooper County would accept. Any laborer worth hiring, that is. It would be impossible to accept the job and subcontract it on a profitable basis. It was evident that Mr. McCormick expected Jim to actually work that handybilly himself which would be unpleasant and which would prove nothing.

He said, "Let's place the proposition on a business basis, Mr. McCormick. How many gallons of water do you want pumped an hour?"

The other man's mouth snapped shut. His eyes were impatient. "The proposition," he began, "is to take the handle of the handybilly in both hands and work it up and down. Water comes out the other end. Let me worry whether the melons are getting—"

"Would you be willing," said Jim, nudging Terence as he spoke, "to pay 75 cents for every 200 gallons of water pumped?"

He read Mr. McCormick's mind with ease. Making Jim O'Flaherty go to work was, after all, a secondary objective. Most of all Mr. McCormick wanted water for his melons. Why quibble as to how it was done. Yet Jim had driven bargains before. And although the agreement was always carried out to the last letter, it seemed to Mr. McCormick that the way it was carried out merited less money than he had agreed to pay. Mr. McCormick refused to be an easy mark.

The trouble with Mr. McCormick, Jim thought, he was lacking in genius. A shrewd man? Yes. A hardworking man? Yes. But when he counted, as he was doing now, he used the fingers on both hands. When he read, he moved his forefinger across the page with his eyes. Right now his fingers moved awkwardly. His eyes had a faraway look. Obviously, Mr. McCormick was calculating the relationship of 75 cents' worth of labor to that of 200 gallons of water.

His fingers stopped moving. He clasped his hands over his stomach. "It's a deal," he said, with considerable satisfaction. "Can you start right away?"

Jim shook his head. "I'll start tomorrow."

When Mr. McCormick had gone, Jim and Terence entered the house. "You really going to work for Mr. McCormick?" sighed Terence.

"I am," said Jim putting on his shoes with regret. "But I've a hunch he's not going to appreciate my method of operation."

"Gee, Unc'," grinned Terence, "you

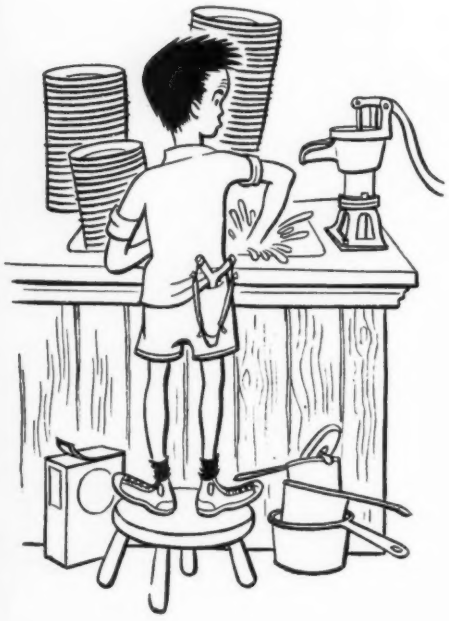
got your brains to working again?"

"I have," said Jim. "And right now they're centered on a gadget I saw in town. How soon can you be ready, Terence?"

Terence grinned, and reached for his hat.

At the moment Jim's cash assets amounted to $15. Retrieving the money from behind his father's picture that hung in the living room, he led the way to the tool shed located behind the house.

A good housekeeper might have scolded Jim and Terence for slovenliness. Living without a woman around the place since the death of Jim's widowed mother, the boys had gotten in the habit of throwing things around and letting them lie there until they were needed again. But there could



have been no criticism of the looks of the shed. An amazing collection of gear, machines and doo-dads lined the walls. And most of the items were neatly tagged with the cost, date of purchase and use as part of the record.

Jim picked out the mine detector he had bought from Hoover's a month before. It was he considered as good as new. "This should do the trick," he said. "Now, let's amble into town."

An hour later, Jim and Terence walked into Bill Hoover's (General Merchandise and Government Surplus). Producing the mine detector, Jim made a try of getting his money back. "This didn't work exactly right," he began. "Thought you might be willing to exchange it. . . ."

Bill Hoover was not a sympathetic man. Nor a generous one. Starting with his straw-colored hair and ending with his boney shanks, he was stingy. The Adam's apple in his throat moved convulsively when he talked. His eyes opened just far enough, under normal circumstances, to admit daylight. Now they were completely closed.

He spoke as if he had memorized the words. "You bought a mine detector from me for $15," he intoned. "Then you went to see old man Peters. You knew his cow had swallowed a wrench. You also knew the Doc would have to wait until the cow got sicker before he'd be able to tell where the wrench was stuck in her innards.

"There was a chance that old man Peters would lose the milker if they waited. But you said you could tell them where the wrench was at once. Old man Peters told you to get it. And all you did was run the mine detector along her sides until you located it. Seems to me that old man Peters paid you $40 for that job. And that's a profit of $25. . . ."

Jim grinned. "But the cow's all right now, and . . ."

"Oh, I'll take it back, Jim, if you don't want it," interrupted Mr Hoover. "Only there'll be a considerable loss to you." He opened his eyes briefly. "Couldn't give you more'n a fraction of what you paid."

Wincing, Jim glanced at Terence. Then he strode over to a gasoline-driven portable pump which was on display. "How much allowance for the mine detector on a trade-in for this pump?" he asked.

The storekeeper walked to the screen door, stared out a minute, and returned. "You can have the pump for $40 and the mine detector."

Jim's heart sank. He hadn't realized the pump was so expensive. Examining the price tag, he found that Hill Hoover only wanted to give him a little better than $5 for the mine detector. His finger closed over the $15 in his pocket. No matter how good a customer you were, Bill Hoover had one prime requirement for a deal: cash on the barrelhead.

Starting for the door, Jim called back, "I'll let you know later, Bill. Maybe sometime this afternoon."

Outside, Terence eyed his uncle with a humorous gleam in his eye. "Gee, Unc'," he ventured, "what happened, your brains stop working?"

Jim sputtered, "Nephews! . . . Money! . . . Mr. McCormick! . . ." Then he strode off down the street.

They expected to find Mr. McCormick on the bank of the river, perhaps manning his handybilly. Instead, they found him at the mill talking to his foreman. The object of their attention was a big saw, obviously in poor condition.

Jim sauntered over, looked at the saw, then decided he'd come right to the point. "Mr. McCormick," he said, "if I could borrow $25, I could start pumping this afternoon. You could call it an advance."

Mr. McCormick brushed a fly off his nose and glared. "It's not enough that I'm about to lose any profit I might make on this timber," he snapped. "But now you want to get paid before you do a lick of work. And if it should rain before the week is out, how would you pay me back? Do I look like an easy touch, Jim?"

Swallowing his disappointment, Jim resumed his interest in the saw. "Sure a mess, ain't it?" he said.

Mr. McCormick nodded. "And there are five more in the corner there, just like this one."

Jim walked over, and stood looking down at the saws.

"Reckon Mr. McCormick's loss on this timber is plenty," said Terence, coming up behind him. "Those nails and bits of barbed wire a chewing up his saws something awful. Reckon a thing like this could just about ruin a man."

"Of course," gasped Jim. "Why didn't I think of it before?"

"Huh?"

"The mine detector," continued Jim. "It worked satisfactory on old man Peter's cow. Why shouldn't it work on Mr. McCormick's logs?"

"Gee, Unc', you think it would?"

"Sure," said Jim. "But now listen, Terence. Since Mr. McCormick is my prospective father-in-law, I'll not take advantage of the situation. I'll let him have the mine detector for $30. Bill Hoover didn't want to allow us but about $5 for it anyway. So with Mr. McCormick's $30 and the 15 we already have, we can still buy that pump."

"Okay, Unc'," said Terence. "I'm with you. And I hope for your sake, it works."

Jim caught Mr. McCormick just as he was leaving through the mill door. Oh, Mr. McCormick!" he called. "I wantta see you a minute."

Mr. McCormick stopped short. "You still here?" he snapped. "I'd thought you'd gone."

"Mr. McCormick," said Jim, "would you be willing to pay me $30 if I

(*Turn to page* 32)

. . . *Lightning Protection*

By R. R. FENSKA

A NUMBER of years ago when workmen reset the metal cap on the top of the Washington Monument they found the points of the lightning rod system flat with the metal cap from the many bolts of lightning which had hit this high point.

Some of you may also have seen the photograph (taken at night) of lightning striking the top of the Empire State Building in New York City. During an electrical storm this skyscraper is sometimes struck not once, but several times. Yet, seldom in this building, or the Washington Monument, are the people aware that the structure has been hit.

Without the protection of a properly installed lightning rod, however, many of our tall structures would be shattered every year by bolts of lightning from the sky. The old saying, "Lightning never strikes twice in the same place," just isn't so.

Nearly every person has seen a tree that has been struck by lightning. The writer was once within 200 feet of a tall tamarack tree in northern Wisconsin when it was hit by lightning. One such experience is enough.

The protection of shade trees against lightning damage is receiving more attention each year, especially in the case of large and valuable, or historic trees. Once a tree has been hit there is usually little that can be done to prolong its life. Damage may include the roots as well as the part above the ground.

Tall trees surrounding a building often act as "protectors" since they will be struck rather than the building itself. However, lightning may jump from a nearby tree to the house because the water pipes and lighting fixtures in the house may form an easier path to the ground than the tree.

The following facts have been observed in connection with lightning damage to trees:

1. Trees in the open, as on golf courses, are in more danger of being hit than those in the forest.
2. Shade trees along city streets are struck more often than trees in the woods.
3. In a group of trees of the same kind the tallest one is in most danger of being hit by lightning.
4. Trees along a river or the banks of a lake are hit more often than those in drier soil.
5. Trees with a tap root, like an oak, are struck more often than shallow rooted trees, like maple.

Mr. Fenska, conductor of this series, is author of the well-known *Tree Experts Manual*, now being revised for third printing.

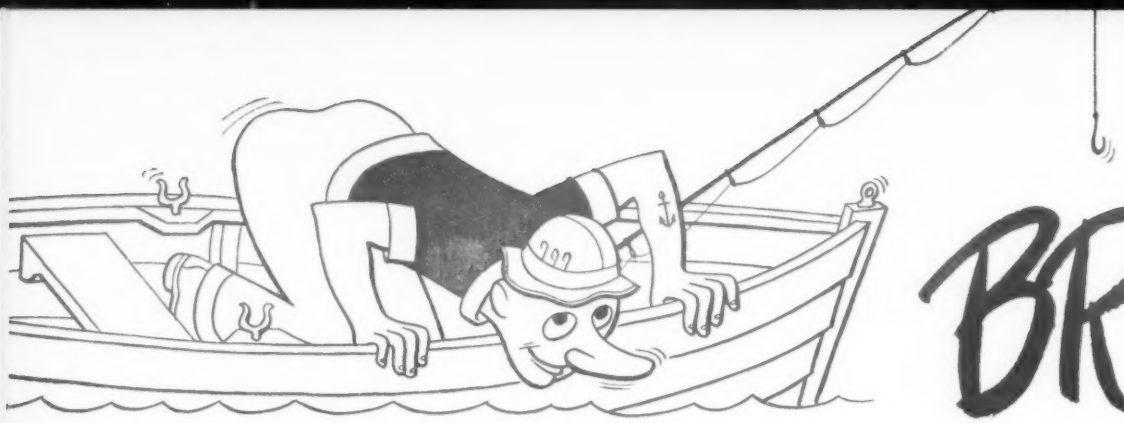
6. A list of lightning struck trees, in this country, as well as in Europe, shows that more oaks are hit by lightning than any other species, while beech, birch and horse-chestnut are least susceptible.

The question is often asked why trees are struck by lightning. The theory generally accepted holds that when clouds of water vapor condense into drops of rain, the process releases electrical energy which results in lightning. When a cloud is charged with electricity the ground beneath the cloud is

(*Turn to page* 34)

Run single conductor from tree's top to ground (right); extend in six-inch deep trench beyond branch tips (left)

F. A. Bartlett Tree Expert Co. Photo



BRIM

A fine fishing companion, the brim sniffer. Always "nose" right where to find the bluegills. Don't scoff. The author was skeptical, too, until he counted his catch

EVER hear of anyone who "fished with his nose?" Sounds fantastic, but such persons do exist. And it's a rare gift, indeed.

Down South they are called "brim sniffers." "Brim" is the common southern name for bluegill, one of America's most popular game fish. I had my serious doubts about anyone being able to smell fish in the water until I went fishing with Cyril Banks. We were worm fishing for bluegills on one of the south's big man-made lakes.

As we "putt-putted" slowly along in our small fishing boat, a brushy stretch of shoreline looked promising to me and I suggested that we anchor the boat and try it. Cyril didn't say a word.

Instead, he brought the boat to a stop and stuck out his long nose and sniffed the water's surface. "Ain't no brim here," he finally said, shaking his head. I scratched my head and must have looked like a fool. Cyril just grinned.

A half mile or so up the lake he again brought the boat to a stop and sniffed the water. After a couple of long sniffs, he said, "Brim here. Get the poles ready."

Fishing just out from an old submerged treetop, we took six big fat bluegills each before they stopped biting. We were using redworms for bait. They hit fast and hard as long as the activity lasted, and the little scrappers cut all sorts of dizzy capers once they were hooked. Right away after they stopped biting we moved on up the lake.

Cyril sniffed out another likely looking nook and shook his head. I sniffed also, and the odor was like all the rest of the lake to me. I couldn't tell whether it was the water smelling slightly fishy, or the fish smelling slightly watery. There was a certain distinct odor there all right, but certainly nothing that smelled unusual to me.

A little farther on Cyril sniffed another nook near a half submerged patch of weeds and nodded his head. "Brim." That was all he said. That was enough. We caught four "big-'uns" apiece before we left the spot.

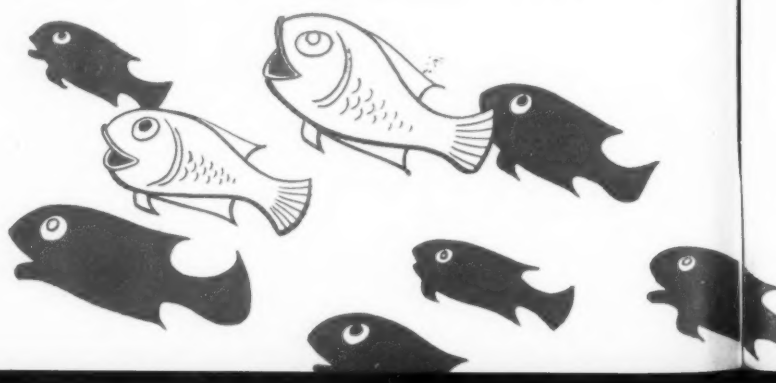
Next I persuaded Cyril to try a spot that looked good to me but did not smell good to him. We fished there for a solid hour without getting a bite. The whole deal baffled me. I just couldn't imagine anyone being able to smell fish down under the water's surface. I had heard that a few people could do it, but seeing it with my own eyes was something entirely different.

I asked Cyril if he could smell any fish other than bluegills, under the water's surface, that is? "No," he said, "no other fish has the peculiar and water penetrating odor of brim. If you'll notice when you dress brim," he continued, "they have a very peculiar and distinct odor. Not bad, just peculiar. Well, if you have the rare gift of brim sniffing, when you sniff out a nook that contains a school of them you will detect that very same odor very faintly."

So, I had the secret of "brim sniffing," and yet I didn't. I knew how it was done, but I couldn't do it. It's no joke, though, if you want to score on bluegills without any misses, find yourself a "brim sniffer" and buddy up with him.

If you can't find a "brim sniffer" to buddy up with, then try flyrodding for the game little rascals. Bluegills on a light flyrod is angling sport deluxe. A very light eight and a half or nine foot rod—glass or bamboo, G level fly line, three foot two and a half pound test nylon leader, either single action or automatic reel according to preference. And include a hatband full of lures—"wooly-worms," "red ibis," "black gnat," "yellow May," a few fly-spinner combinations and a cork bodied flyrod popper or two.

A good system is to wade slowly up a shallow stream and flip the lures



SNIFFING IS AN ART

By CARLOS VINSON

Brim Sniffer Cyril Banks, the author's fishing partner

in to the bank. Let them plunk into the water as close to the water's edge as possible, and then retrieve them in short quick jerks. It's wise to let the lure lay still for a minute or two after it hits the water before the rod tip twitching starts. Or, if it is a sinking lure, let it touch bottom before starting the retrieve.

Lake fishing, of course, where flyrodding is the system, is somewhat different. Keep your boat at slowest trolling speed and a good casting distance out from the bank. Just move along very slowly and flip the flies or poppers toward the bank and retrieve as in stream fishing. The same method can be used while fishing the larger farm fish ponds or smaller private lakes, and such waters produce some of the very largest bluegills to be found anywhere.

In many sections of the country flyrodding for bluegills is "the" sport, even for old moss-backed trout and bass fishermen. No fish its size fights harder than the bluegill. On a light flyrod, they are a compact little bundle of dynamite, a model fish for the average fisherman.

A member of the sunfish family, the bluegill is found in almost every part of the United States and Canada. Specimens ranging up to three pounds in weight have been caught, but the general average is considerably below that. A half pound bluegill is considered a good size.

The bluegill is the choice of all fish for farm fish pond stocking. It is very prolific and highly adaptable. It furnishes farm people with more fishing fun than any other fish. "Little Willie" with his willow pole and can of worms can slip down to the pond most any time and snag a nice mess of fish for the whole family. And on Saturday afternoon Mom and Pop and the whole family can share the fun. Pop can unlimber that fancy flyrod, while the rest of the family snags 'em with cane poles or what have you.

On the table, after having been properly cooked, the bluegill takes a back seat to no other fish. Dress, wash, freeze overnight, place in water and let sit for an hour, roll each whole dressed fish in corn meal that has been salted to taste, and then place in a skillet of sizzling hot grease and fry to a golden brown. The skillet should be at least half full of grease, and the frying should be rather slow after the fish start to get brown.

Don't forget to freeze them before cooking. It makes them taste a lot better.

SWEET ACACIA

By DONALD CULROSS PEATTIE

"FARNESIANA," one of the costliest scents distilled by the French perfumers, and worn by the most knowledgeable *exquises*, is derived from the flowers of this straggling, shrubby little tree which is so common throughout western Texas, as part of the thorn forest. Indeed, the Huisache, as the Texans like to call it, grows thickly around lakes and "tanks" (watering holes) and drainage ditches in the cattle country of the Lone Star state.

It grows abundantly on the mesquite flats, taking over with especial vigor when mesquite trees have been removed by agencies natural or human. Some will have it that it was first brought to San Patricio County from Mexico by one of the Mexican commissioners sent to represent the government in that colony. He is supposed to have planted them out on his hacienda, and it is a legend that all the Huisaches now growing in Texas have sprung from that source.

But this is probably as fictitious as the myth that the bluebonnets (lupine) were brought here by friars and monks from the Holy Land. The Huisache or Sweet Acacia is considered by botanists to be a native of western Texas and also on the lonely Baboquivari Mountains that rise from the desert and mesquite flats, southwest of Tucson, Arizona.

But long before the first white settlers reached Texas and Arizona from Mexico, the Sweet Acacia was a favorite plant in the gardens of Mediterranean Europe. It seems to have been brought in 1611 from Santo Domingo and first cultivated in the gardens of Cardinal Odoardo Farnese, where the exotic perfume of its little butterballs of bloom was grateful to the exquisitely perceptive senses of that sensual and gifted family, the Farnese.

Intermarried with the Borgias and the de Medicie, the Farnese family filled the highest offices of the Church in the 16th and 17th centuries, including the Papal throne. It was a poor Farnese who was not a cardinal or at least a bishop, a duke or at least a ruthless soldier of fortune, the daughter of a cardinal, or at least the mistress of one. Alessandro Farnese, son of the illegitimate son of Pope Paul III, was made a cardinal at the age of 14.

He it was who founded at Catrarola, near Viterbo, the sumptuous villa and gardens that still bear the family name. Its very walls are three miles in circumference, and the Cardinal's son and grandson constantly enriched the flora of this garden with all that was new and rare in plant life. When the garden belonged to Cardinal Odoardo Farnese, he ordered Pietro Castello to draw up a description of its botanical treasures, and in his rare publication of 1625 we find the first mention of this American tree now known as *Acacia Farnesiana*.

Perhaps half a century later it was introduced into southern France, and rapidly became one of the favorite dooryard trees of Provence. With time it was found that the climate and soil of the Riviera, between Grasse and Cannes, and between the Esterels and the Var River, precisely suited it, so that today that smiling district is a happy home of the Sweet Acacia or *cassie*, as the French call it.

For *cassie* is one of the most important basic materials of a large number of the mixed flower perfumes put out by the great Grasse distilleries. A strain of this tree developed there produces two flower crops a year; the best essence is derived from the flowers of September and October.

On account of its cruelly pricking thorns, the *cassie* is no favorite with the peasant women who harvest the blossoms of this tree. They collect them in the morning as soon as the dew has burned off, and return two or three times a week for a new cutting.

At the Grasse perfumeries the odor is generally extracted with oils, thus preparing a pomade which goes into extracts of violet and aromatic vinegar, into rouges and rice powders; a very concentrated form of extraction with alcohol is known as quintessence of *cassie*.

And what does it smell like, this wonderful perfume? But how can anyone describe an odor, to those who have never smelled it, save in terms of some other? The best one can say is that, compared with the fragrance of the Australian Acacias so familiar in the gardens of Southern California, Sweet Acacia is far more honeyed and less dry and polleny. It is more intense and, by that same token, more cloying. Certainly it is an odor that once perceived will

* ***This article will appear as a chapter in another of Mr. Peattie's books, A Natural History of the Western Trees, scheduled for publication this fall by Houghton Mifflin Co.***

A Josef Muench photo

be identified forever after, so utterly unlike any other in the world it is.

In Texas there is no Grasse, no great perfume trade, yet the beekeepers there value Huisache highly, for it is an important pollen plant, even though it does not, like its relative the *huajillo*, produce the famous Uvalde honey. But bees must have a rich store of pollen to give their youngsters proper protein diet, particularly the future queens. And the pollen is the more precious to the bees because it comes at a time, usually January and February, when not many other plants are in bloom.

Under such names as Popinac and Opopanax, the Sweet Acacia has been grown almost around the world in tropical and subtropical countries. There are few where it has not escaped from cultivation, and in the Hawaiian Islands it has become practically a pest. But it is a pest with many charms, with its feathery foliage consisting in many sensitive leaflets and its butter-yellow blooms which make it, said a French poet, "a load of balm for every wind that that stirs."

The KING'S ARROW PINE

By NELSON C. BROWN

Prized in Colonial days as masting for Her Majesty's Navy, this stalwart tree is being rediscovered in the North Woods. Strong and even-textured, it is the last remnant of Maine's virgin pine

THE last vestiges of the King's Arrow pine, once regarded as the finest and most useful of America's timber trees, are being rediscovered in northern Maine.

Up where the wierd, shrill cry of the loon still pierces the primitive wilderness, the genuine "punkin" pine of early Colonial and Michigan logging days is, like Phoenix rising from the ashes, coming back into its own. In the shadowed recesses of towering Mt. Katahdin, beyond sparkling Moosehead Lake, stalwart trees 30 to 50 inches in diameter are coming out of the woods. Some rise to a height of 150 feet and are from 300 to 900 years old—a far cry from the usual cabbage or old field pasture pine going into the vast box trade of New England.

These trees remind one of the West Coast's great Douglasfirs. One of the early-day Maine logs scaled 3964 feet. One tree was 60 inches in diameter and 180 feet high. At 156 feet it was 26 inches in diameter. Some timber for the effete East where some people say they grow only little toothpicks!

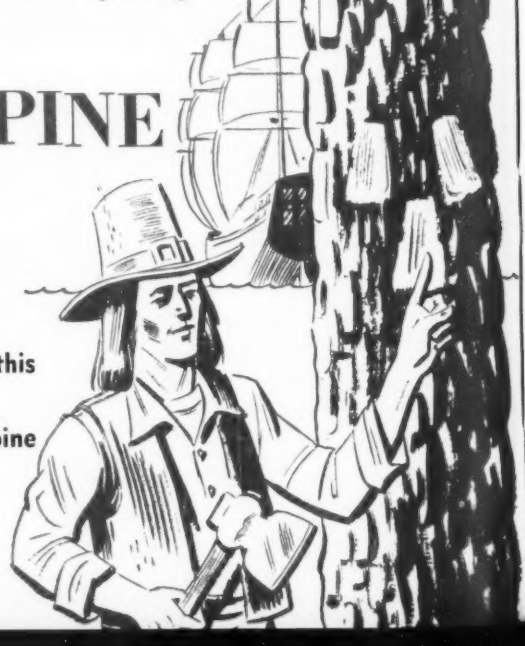
Named for the King's Arrow, or Broad Arrow, a symbol of British ownership since 1554, these giant trees once were used for masts and spars in Her Majesty's Navy. Under the charter of William and Mary granted in 1691, an act was passed for the "preservation of pine and other trees growing in Her Majesty's Colonies—for the masting of Her Majesty's Navy."

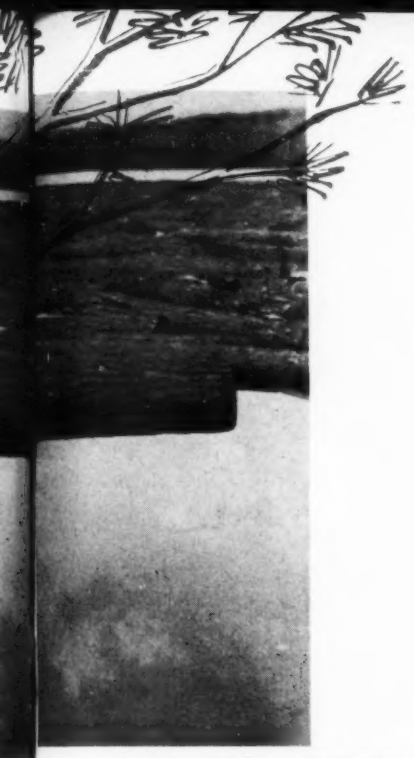
The Royal Trespass Edict of 1710 imposed a fine of 100 pounds sterling for the cutting of a single mast pine. This was one of many irritations and annoyances bitterly resisted by the colonists that culminated in the Boston Tea Party and the Revolutionary War.

But the King's Arrow pine is interesting and of value for more than historical reasons. It is the last remnant of our old timber pine—close-grained, strong and even-textured. It is no longer available elsewhere.

(Impending extinction of the clear-timber King's Arrow pine doesn't mean that Maine's white pine industry is approaching the vanishing point. As Professor Gregory Baker of the University of Maine forestry department points out in his recent book, One Hundred Years of Lumbering in Maine: "Even though other species have assumed greater relative importance, Maine is still one of the leading producers of white pine in the Nation." However, little, if any, of the white pine lumber can match the superb quality of the King's Arrow pine.)

King's Arrow logs are water-cured and free from pitch. They will saw without gumming up [illegible] which is important. Most of the lumber is in the water from three to six months before sawing. Paint will peel on it as on ordinary pine. It is water-cured. This is one reason why old New England homes have stood up so long.





Straight, 16-foot King's Arrow logs being water cured in Lake Repogenus

Wide widths up to 30 inches are available, and in long lengths, because all the logs are large and practically all are 16 feet long. The artistic appearance and arrangement of the heartwood provides a unique color design which makes it unusually attractive for interior finish.

Today the King's Arrow pine is being logged mostly on the headwaters of the west branch of the Penobscot River where the Great Northern Paper Company has a vast domain of sustained yield spruce. Since white pine is not used for newsprint, these trees were left standing. Now by huge booms their great logs are being towed 18 miles down Chesuncook Lake to a mill on Lake Ripogenus.

The logs have seasoned in the water to a deep pinkish yellow heartwood—typical of the Colonial-day punkin pines. Only virgin trees are cut. Trees often yield six to eight logs each. One log 34 inches in diameter at the butt and 26 inches at the top sawed out all selects, or clear grades, including a boxed heart plank four inches thick, 22 inches wide and 16 feet long. These unusually wide and long boards went entirely into table tops.

An enterprising and forward-looking forester, Arthur Davis, trained at the Syracuse and Harvard forestry schools, had the Yankee ingenuity to tackle this adventure in the North Woods. The inaccessibility of the region and the partially defective condition of the trees frightened away less hardy and pioneering operators. Reared in New Hampshire, Davis is a typical, canny New Englander. He believes in forestry as a business and has already demonstrated that he can make a good livelihood from forestry.

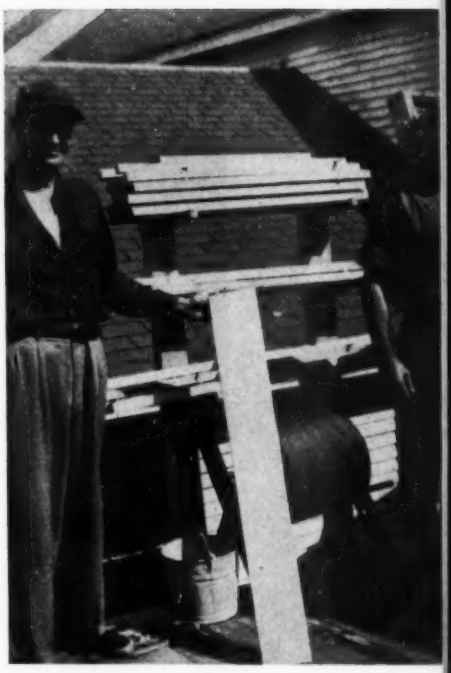
However, it has proved difficult and expensive to get these white pine logs to a sawmill. Davis cannot operate his mill during the cold winter months because of the frozen lake where he rafts and stores his logs and due to their size and age, the heart centers are partially defective and require special techniques of utilization.

This is something new in modern lumbering. Davis is re-discovering the architectural and aesthetic possibilities of old punkin pine for table tops, interior paneling, cobbler benches (so popular in modern homes), fireplace mantles, and many other specialized and decorative features for which wide white pine with its characteristic features is so well adapted and so rare.

The heart centers of the King's Arrow pine lend themselves admirably to artistic interiors of the finest architectural design. A combination of red heart centers and reddish tight knots makes a very effective panel design—somewhat similar to pecky cypress. Also some boards resemble sound and wormy chestnut and oak which have been so successfully used for the interior paneling of hotel and other public building lounges and lobbies.

The mill's personnel is entirely of local "residenters." They are all descended from old Maine stock. The grader or marker, who is also the trimmer, is Everett Hodsdon—only 75 years old. Still spry and active, he has been grading pine for more than 50 years. He determines the quality of the product, trims for length, cross-cuts to raise the grade of each board, if possible, and marks the width, length and grade of each piece. With round edge lumber for a special order, he marks the contents in surface feet. And he works a ten-hour day.

Prime white pine boards like this are superb for interior finishing

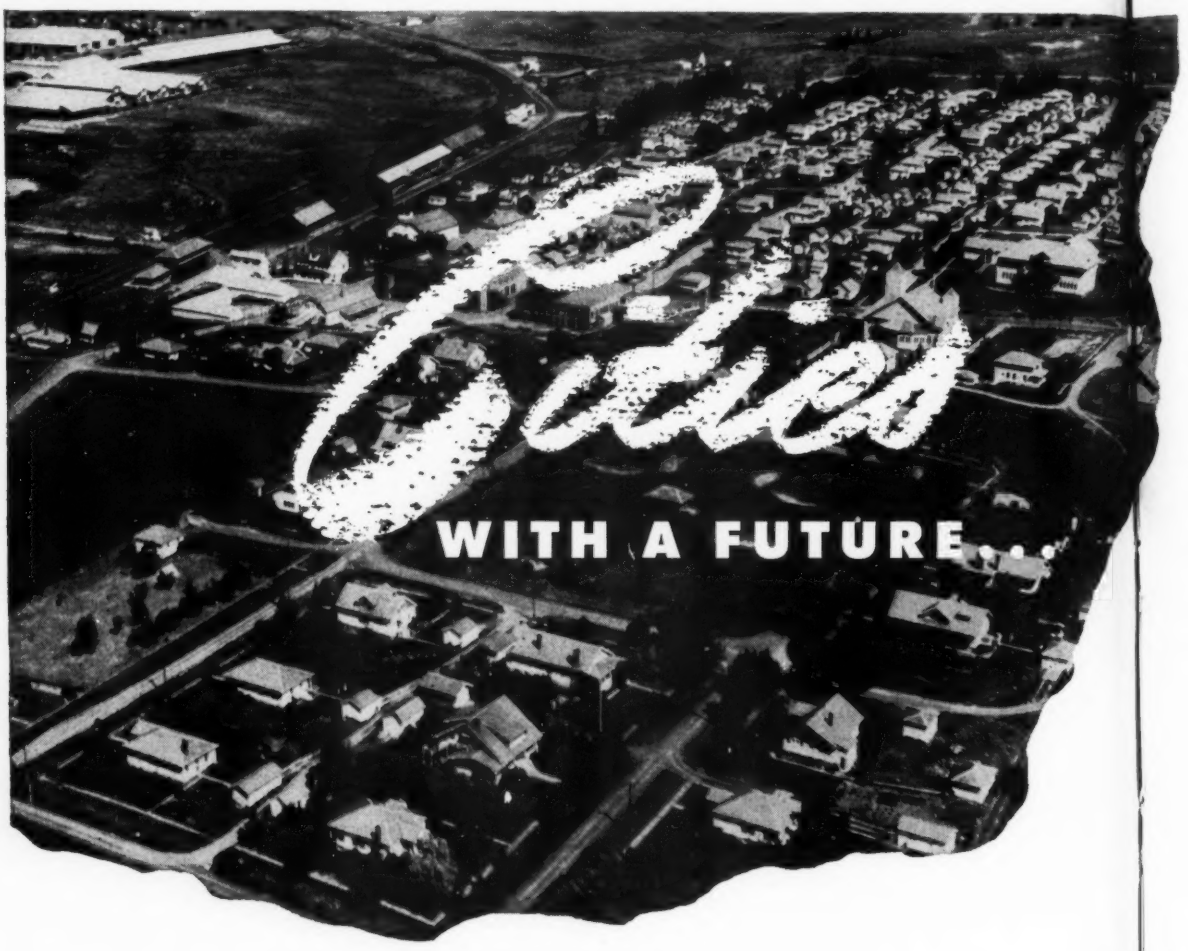


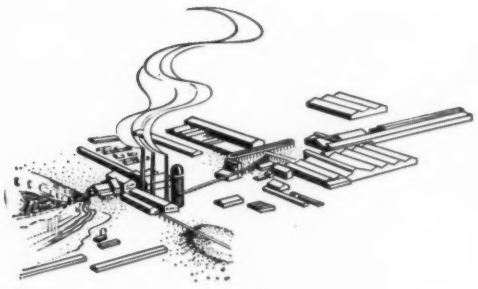
Even slabs and edgings are utilized at mill owned by Arthur Davis, left

Arthur Davis prides himself on efficient utilization of his Paul Bunyan logs. Being a thrifty New Englander, he resents the wastage of good raw material. At the rear of the sawmill he has two bolter men who sort over the slabs and edgings for six inch clapboards, shade roller squares and stickers for yard piling of green lumber.

The best clear wood is, of course, just inside the bark. There is a recovery of about $3,000 worth of this material for each million board feet sawed. Davis uses three lengths of shade roller squares—36, 42 and 48 inches, and two sizes, 1 x 1 inch and 1⅛ x 1⅛ inch. The clapboards are all six inches wide but are used in 24, 30, 36, 42 and 48 inch lengths, and are graded into clears and seconds. About two-thirds of this recov-

(*Turn to page* 40)





VISITORS WELCOME
GUIDED TOURS

About 1900, increased demand for White Pine lumber resulted in construction of what is now the Potlatch Unit of Potlatch Forests, Inc. For many years this plant was the largest of its kind in the world. Today, after fifty years of operation, the mill still produces record volumes of quality lumber from Idaho White Pine, Fir, Larch and Cedar. These species grow intermingled on forest lands adjacent to the mill property.

NO. 8 OF A SERIES

POTLATCH, IDAHO

Nestled in rolling hills of the great Palouse area of the Pacific Northwest, next door to some of the finest timber growing lands in America, is the city of Potlatch, Idaho.

Here, fifty years ago, a group of farsighted lumbermen decided to build a sawmill and a town. Proof of their good judgment is the city of Potlatch today . . . an active and thoroughly modern community.

Potlatch residents live in hundreds of modern homes. They have a large, well-equipped hospital and enjoy splendid educational and recreational facilities. This well-managed city offers many services . . . hotel, garage, theatre, bank and up-to-date stores. Its people worship in churches of their choice.

Policy of Potlatch Forests, Inc., now as always, is the intelligent production of quality forest products from timbered lands that guarantee a bright tomorrow for this city with a future.

Weyerhaeuser

SALES COMPANY

ST. PAUL 1, MINNESOTA

WEYERHAEUSER TIMBER IS A CROP FOREST PRODUCTS

Stump of a petrified Sequoia

"Hell with the fires out," a cavalry general once called this scorched expanse in North Dakota. But the modern traveler finds it an awesome vista of grotesque geology

By CHARLES L. CADIEUX

THESE ARE Bad Lands

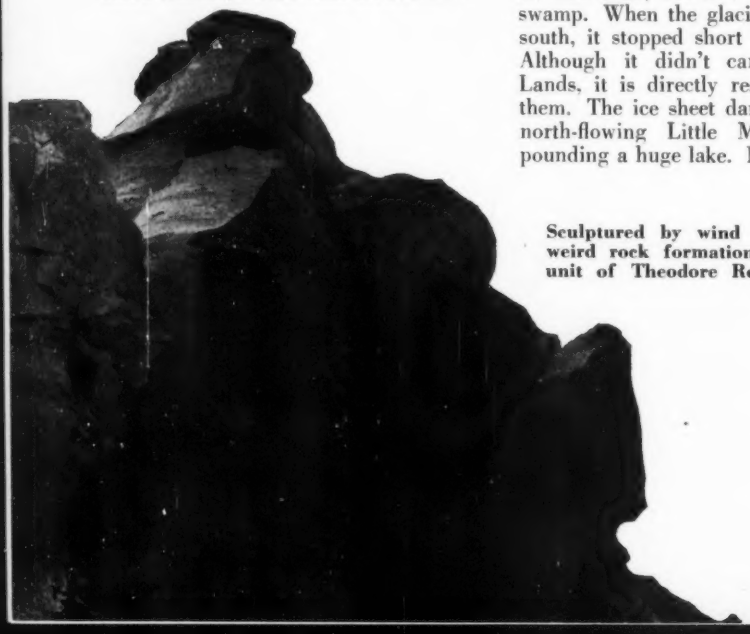
THE earliest French explorers, passing through western North Dakota, made the notation on their charts, *Mauvaises terres a traverser*. The literal translation is that these are hard lands to travel through, but the "Bad Lands" sobriquet has stuck to this day.

About 120 miles west of Bismarck, the capital city of North Dakota, U.S. Highway 10 picks its way along the edge of the Bad Lands. The hurrying traveler stares in wonder at the tiny portion of the awesome grandeur that is visible from the road, then goes on his way. He doesn't realize what he is missing. Here the Little Missouri River has carved the yielding soils of the great plain into fanciful "mountains in reverse."

Instead of rising above the plains, the architecture of Nature descends into the earth in a series of steep-sided chasms, whose walls are brushed with every conceivable hue. The yellows and whites of clay deposits left by the ebb and flow of ancient seas, the blood red of scoria ash and the black of lignite are the major hues, but every conceivable shade between is evident where ferric and cupric salts lend variety to the easel of geology.

On a great island standing above the rolling seas of buttes and valleys there is a vast forest of prehistoric trees, the petrified forests of the North Dakota Bad Lands. Many miles of the ancient swampland are covered by younger formations, but where the knife of rushing waters has excavated the site, the trees show in consistently level formation.

Scientists who have studied the petrified forest say that all of the petrified remains are of Sequoias that flourished there millions of years ago. At that time, the area was a huge swamp. When the glacial ice moved south, it stopped short of this area. Although it didn't carve the Bad Lands, it is directly responsible for them. The ice sheet dammed up the north-flowing Little Missouri, impounding a huge lake. It was the silt-



Sculptured by wind erosion, this weird rock formation is in south unit of Theodore Roosevelt Park

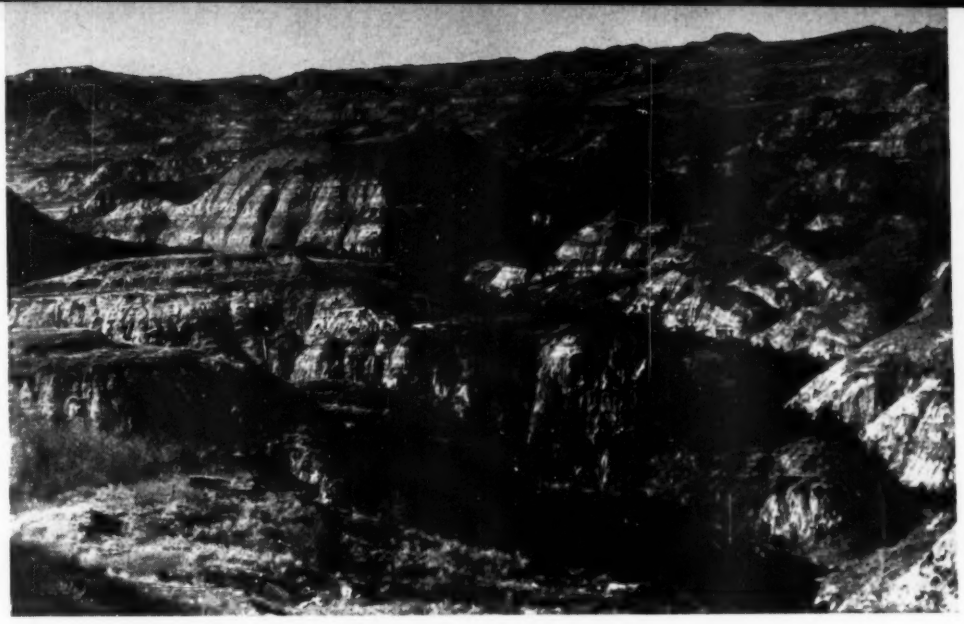
tation on the bottom of this lake that put the preserving and concealing blanket around the giant Sequoias.

The water level rose steadily, until the overflowing lake found a new outlet, down to the Big Missouri, near the present day town of Elbowwoods. There was a drop of over 700 feet in the few miles from the lake to its new outlet. Because of this, the waters of the Little Missouri were fast waters. The cutting edge of fast water ground away the soil and fashioned the terrible grandeur of desolation that is the Bad Lands today.

In the early days of the campaign against the Sioux, General Sully and his troops fought an engagement with the Indians in the midst of the Bad Lands. Sully referred to the area as "Hell with the Fires Out." Sully was wrong, for the fires are still burning. Like a large portion of North Dakota, this area is underlaid with lignite coal in shallow layers. Lightning and other natural causes have ignited the lignite which still burns to this day. The reds and pinks that are splashed so plentifully over this region are the ashes of age-old lignite fires.

The northern slopes of this area are covered by a healthy growth of Bad Lands cedar, *Juniperus Scopulorum*, but the southern slopes, exposed to the burning sun in a land of low rainfall, are bare of anything green.

Down along the flood plains of the Little Missouri, cottonwoods and box elder, ash and aspen try to take the place of the majestic forests of eons past. These green valleys once sheltered the cattle of President Theodore Roosevelt, who spent some of his



Strangely-shaped buttes, resplendent with almost every hue, stretch beyond the distant horizon

happiest years as a rancher in the Bad Lands. The lush grass of the bottomlands inspired the Marquis de Mores, fabulously wealthy French nobleman, to start a beef butchering industry here that once threatened to rival Chicago.

Up on the high sides of the buttes, where the petrified forest is exposed, the only living thing is the pure white flower known as the Butte Primrose or Gumbo Lily. Farther down the sheer cliff walls, the harshness of the scene is relieved by the living green of creeping cedar, *Juniperus Horizontalis*. The petrified forest stands aloof, immutable before the elements, safe from fire and flood—even safe from man himself.

The petrified forest is in little danger of being damaged by souvenir hunters, for a large portion of the area is now enclosed within the boundaries of the nation's only National Memorial Park, named after Theodore Roosevelt. Besides the protection afforded by the Park Service, the petrified trees are safe because of their inaccessibility. The only road across the miles of savage land between U.S. 10 and the ancient forest is passable only to a four-wheel drive jeep or heavier vehicle.

Only the true lover of the great signs of the past will make the long climb up to the plateau, and that type of person won't chip off pieces. In addition, the Little Missouri, whose waters uncovered the trees, seems to have relented. It now guards the shortest approach with an unbridged torrent that can be forded only in driest weather.

The Theodore Roosevelt National Memorial Park is composed of two units. The southern lies alongside U.S. 10, where an excellent all-weather road leads the tourist through about 12 miles of the best scenic portion of the south unit. This is all that the average tourist sees, but the most beautiful and unbelievable part of the park is the north unit, 60 miles to the north of Highway 10. It is reached by turning north on U.S. 85 at Beach, North Dakota.

Another good road leads off U.S. 85 and winds through the rugged water carvings of the Bad Lands, down to the level of the river at Squaw Creek, popular picnicking spot, and then over a series of hairpin turns and steep grades to the highest point in the park, Sperati Lookout. The view from this vantage point is one of the truly great sights in North American scenery—yet one that has been seen by a very few!

Don't hurry on a sightseeing trip through the Bad Lands. Plan to spend at least two full days, for there is much to see. In addition to the unparalleled scenery, wildlife is abundant and tame. Both whitetailed and mule deer may be seen feeding along the cedar covered slopes, and on the high plateaus antelope are numerous.

Nearest city of any size is Dickinson, about 30 miles to the east of the south unit. Here can be found excellent hotel and motel accommodations. There is no charge of any kind for enjoying the attractions of the park. Most people find that their biggest single expense is for camera film. There is much to photograph, plenty to interest the historian, the geologist, the student of wildlife—anyone who delights in seeing another facet of the wonder that is outdoor America.

Top—human figure in right foreground is dwarfed by vast geological design; Bottom—only road to petrified forest must ford the Little Missouri River

PAPER CUPS IN RESERVE

By ELIZABETH FAGG

Taken for granted in our everyday lives, this unheralded product of the forest is playing a vital role in the nation's mobilization program

Emergency stores of paper containers are located at 20 target areas throughout U. S.

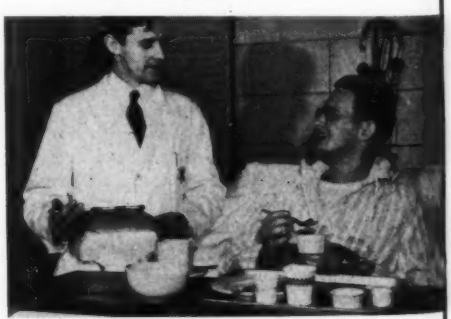
Woodpulp (being inspected by workman) must be free of germs before being turned into paper containers

WITH all our country's resources mobilized for defense, the part forests are playing is sometimes dramatic in the most unexpected ways. No one would gainsay the vital necessity of guns, medicines, petroleum and dozens of other clear examples of essential equipment. But, interestingly, one of the essential items during an emergency is a paper cup, a forest product the layman seldom regards as critical.

However, so vitally needed are single-service, disposable paper drink and food utensils — for the armed forces, defense industries, and hospitals—that these demands may leave

(*Turn to page* 33)

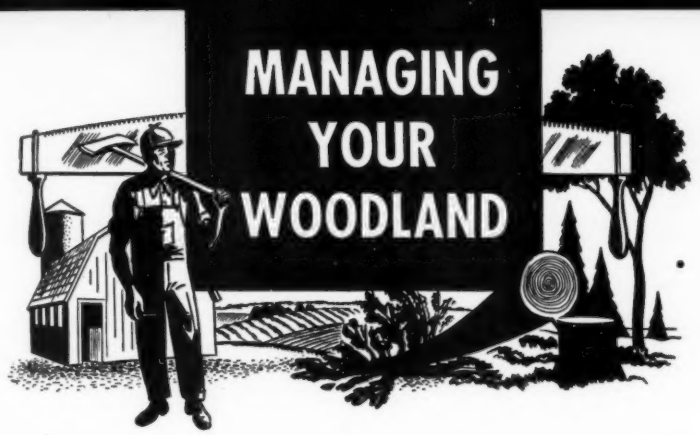
Navy uses 100 percent paper service when sailors are at battle stations



Sanitary paper cups have proved indispensable for feeding in hospitals

Defense plant workers pause for morning coffee served in paper containers

Paper utensils are used by Red Cross at emergency feeding demonstration



. . . *In the South*

Pruning is Profitable

By T. A. LIEFELD

THOUSANDS of acres of woodlands in the South today are producing too much cheap, low-grade, knotty, second-growth timber. This has been brought about largely by a combination of poor forest-management practices.

Because of: (1) uncontrolled fires, past and present; (2) harvesting which has not left sufficient seed trees for adequate restocking; (3) "high grading" which has repeatedly taken all but the very poorest trees; and (4) cutting of trees too small for lumber and other products, we have inherited too many stands of understocked, open-grown, limby trees which will never produce anything but low-grade products.

Young trees start to form limbs close to the ground. As the trees grow larger, the lower limbs die from lack of sunlight. On a tree that grows in the open the branches get more light, more of the lower branches live, and a limby tree with little clear wood results.

In a close stand, however, the side limbs are shaded out earlier. The dead limbs usually decay, and finally drop off, or are knocked off. When these dead limbs drop off close to the trunk, the knots will soon begin to grow over, and clear lumber will start to form. This is nature's method of pruning.

But at best, natural pruning is too often a slow, inefficient, and profit-robbing process, particularly nowadays when it hardly pays to grow timber to the large size of the virgin or old-growth stands. Even small dead branches, after they die, may persist on the tree for as long as 50 years, especially pine limbs with a resinous heart content.

The large amount of clear wood harvested from the virgin forest was due largely to early crowding, advanced age, and the big size of the trees. But as the scarcity of high-quality timber becomes more and more acute the need for artificial pruning—and the profits therefrom—is definitely increasing.

In even-aged stands, either naturally established from seed, or planted, only the dominant trees usually will survive and grow to good sawlog size. They are the fastest growing trees, that produce the largest limbs. This condition causes a conflict between growing larger timber rapidly and at the same time wood of high quality. It creates the management objective of the "ideal tree," which grows rapidly but not too fast, and is pruned neither too little nor too much.

Pruning demonstration at Duke University Forest, Durham, North Carolina
USFS Photo

The three processes upon which skill must be concentrated to produce a stand of such ideal trees are: (1) securing a fully stocked but not too dense catch of seedlings; (2) proper thinning; and (3) artificial pruning of the *crop trees* when this operation promises profit.

Because of the present high value of quality lumber, and all indications are that it will remain so, it pays to prune the crop trees—those trees which ultimately will be grown to the larger sizes for sawlogs, and possibly also for poles, piling, and other large-dimension products.

The southern pines, because of their rapid growth, are particularly well adapted to artificial pruning, though the opportunity for treating our hardwoods in like manner should not be overlooked. Recent studies show that artificially pruned stands of southern pines can produce as much as two or three times the *net* profit per acre of similar unpruned stands.

Benefits—and profits—from pruning are confined to the possibility of improving the quality of lumber and other wood products in the zone of growth laid on after the pruning occurs. Therefore, artificial pruning will pay off not so much in proportion to the cost of the pruning as in the subsequent rate of growth of this clear wood zone.

It is doubtful that pruning will prove worthwhile on trees which already have reached a breast-high diameter of more than six or eight inches, because the size of the outer core of wood produced thereafter

(*Turn to page* 44)

NEWS IN REVIEW

New NLMA Manager—Leo V. Bodine, 42, May 19 assumed duties as executive vice-president of the National Lumber Manufacturers Association. He came to his new post from the Weyerhaeuser Sales Company of St. Paul, Minnesota, of which he had been vice-president since 1950.

Mr. Bodine has had 23 years of experience in the lumber industry. He began his career in 1929 with the Clearwater Lumber Company of Lewiston, Idaho. This firm became a part of Potlatch Forests, Inc. in 1931 at which time Mr. Bodine began working in the sales department of the new organization. In 1934 he left Potlatch to join a subsidiary company called Wood-Briquettes. He was appointed public relations officer for Potlatch in 1941 and in 1949 he left that position to become executive representative for the Weyerhaeuser Sales Company.

Mr. Bodine has been very active in lumber industry organizations and since 1950 has chairmanned the NLMA public relations committee.

The post taken over by Mr. Bodine was left vacant by the death May 2 of Harry T. Kendall who accepted the job on an interim basis after the resignation a year ago of R. A. Colgan, Jr.

* * *

Austrian Visitors—Six Austrian foresters on a three-week tour of the U. S. recently visited AFA offices to obtain information about the history, objectives and current activities of the Association. All land-owner foresters practicing forestry on their private estates, they were traveling in this country under auspices of the Mutual Security Agency and the Department of Agriculture.

* * *

Yield Taxes — "Forest Yield Taxes," a 52-page report based on studies made by the U. S. Forest Service, was released recently by the Department of Agriculture. The tax, now in effect in 14 states, differs from the commonly used general property tax in that the land itself is taxed annually but the timber only when it is harvested.

Interest in the yield tax principle, the report points out, stems from dissatisfaction with the general property tax which has been blamed for rapid liquidation of mature timber, for instability of forest land ownership, and for failure of owners to grow new tree crops on cut-over lands.

Differences among present state laws rule out a single model law. A good yield tax law, the report observes, should lead to its adoption over a wide area. The report indicates that such a law should be simple, adapted to present day methods of forest management, should reduce to a minimum uncertainties as to future tax liability, provide for equitable taxation among different owners, for effective administration, for declassification of forest land previously made subject to the law, and should not disturb local revenues unduly.

The booklet (Circular 899) is for sale at the Superintendent of Documents, Washington 25, D. C. for 20 cents per copy.

* * *

Alaska Pulp Plant—The first contingent of construction workers has arrived in Ketchikan, Alaska to start work on Alaska's first pulp mill, the 45-million-dollar plant being installed by the Ketchikan Pulp Company.

The largest industrial enterprise in Alaskan history, the mill will produce high grade dissolving wood pulp which will be sent to the eastern seaboard area of the U. S. for processing into rayon and cellophane. Wood for the plant will come from the Tongass National Forest.

* * *

Changes at Marathon—John Stevens, Jr. has been named president of Marathon Corporation, Rothschild, Wisconsin, succeeding D. C. Everest, immediate past president of AFA and now a member of the board of directors. Mr. Everest held the posts of both chairman of the board and president of Marathon prior to Mr. Stevens' advancement. The retiring president retains the chairmanship and plans to share the responsibilities of management with Mr. Stevens.

Marathon also named Leo E. Croy and Roy J. Sund as executive vice-presidents in charge of marketing and production activities, respectively. Frank J. Dvorak was made vice-president for finance.

Snakin' Out Whole Trees

OVER SIX FEET OF SNOW

Loggers work all winter in Potlatch Forests

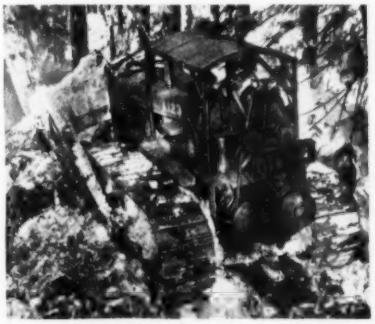
SKIDDING OUT THE LONG ONES. An International TD-18A—one of thirty on this job—heads for the landing with tree-length logs in tow. No logging arch—most of the way the logs glide like toboggans on top of the snow.

Up in northern Idaho the snow stays 6 feet deep from December to March, and it never gets warmer than 30°F. below zero for days at a time. But Potlatch Forests, Inc., keeps right on logging 52 weeks a year.

All winter they skid whole 100-foot trees, just as they are felled, with six or seven trees per drag.

NO LOGS LEFT OVERNIGHT

International TD-18As do the job, working right up to the "sawyers" so that newly felled trees are not covered by overnight snowfalls before being snaked out.



THERE SHE GOES! A TD-24 clears a trail in 30° below zero cold. International's quick all-weather starting pays off big here!

OPERATOR LIKES POWER

Big Red TD-24s doze the skid roads. And the way operator Cyrus Parcker puts it,

"Power on both tracks in turning makes a world of difference. You can maneuver uphill with big loads because the TD-24s steering and speed and power make it the easiest-handling crawler in the woods!"

FAST DEALER FIELD SERVICE

For the whole lowdown on the whole International line, see your International Industrial Distributor. Call on him for fast field service and complete shop facilities, now and through the busy years ahead!

INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS

INTERNATIONAL

INTERNATIONAL HARVESTER

POWER THAT PAYS

O'Flaherty's Deal

(*From page* 16)

can show you how, and supply you with the necessary equipment, to eliminate the trouble you're having with your saws?"

For a moment, Mr. McCormick said nothing. Nor did he seem the least bit angry. Then all of a sudden his eyes lost focus. A small fire started in their depths and spread rapidly. "Jim," he began, "I'm an easy-going man. I've been patient. And maybe some day I'll be rewarded. But right now I want you to go, and quick!"

"No, no," said Jim. "You don't understand. Here watch this." Then he ran the mine detector slowly over one of the "loaded" logs. A moment later he paused, and motioned to Terence.

Terence came over, carrying a wedge in one hand and an eight-pound sledge hammer in the other. "You ready for these now, Unc'?" he asked.

Jim nodded. "Try it right here, Terence," he said.

Terence held the wedge on the log as Jim gave it a heavy blow with the sledge hammer. A moment later Jim handed Mr. McCormick a three-inch-long spike.

Mr. McCormick looked first at the spike. Then at Jim. Then at the mine detector. "You win, Jim," he said sourly, and reached for his wallet. But his heart wasn't in it.

Sometime later Jim and Terence removed their shoes and settled themselves comfortably on the river bank. Jim didn't want to be tuckered out for his date with Molly that night. Right below them the portable pump clankety-clanked green dollars into the O'Flaherty till. Jim was able to close his eyes and recoup his strength.

Terence, however, wasn't satisfied. "What do you suppose Mr. McCormick will say when he sees our method of operation, Unc'?" he asked.

"Don't know," said Jim, opening one eye as he spoke. 'Reckon we'll just have to cross that bridge when we get to it."

Terence grinned. "Well, you'd better get ready to cross, Unc', 'cause we're to it, right now."

Mr. McCormick looked down at the pump, and laughed inwardly. "It seems like I'm always paying my money to do a job that somebody or something else does for you," he snapped. "I get the feeling I'm supporting you, Jim."

"It will be better after Molly and I are married," Jim said soothingly.

"Then you and I can team up. Why with my brains and your back . . ."

Mr. McCormick snorted. "I got no idea of allowing Molly to marry up with a man who lives by his wits."

Jim sighed and settled his back against the bank.

"Gee, Unc'," said Terence as they watched Mr. McCormick tramp off toward the house, "it looks like you'll never marry Molly, now."

"Oh, yes, I will," said Jim pensively. "It's just going to take a little more convincing, that's all. Besides, Bill Hoover still wants too much for that diamond solitaire. I can afford to be a little patient."

"Guess then I'll just have to wait," said Terence, thinking, no doubt, of the unwashed dishes at home. Then he settled his back against the bank, too.

Paper Cup Reserves

(*From page* 28)

insufficient quantities for equally urgent civil defense needs. To assure a reserve supply for civil defense requirements, the paper cup and container industry has worked out a plan that may well be a forerunner of action by other manufacturers of supplies vital to the mobilization program.

The industry has voluntarily stockpiled 25 million paper food and drink utensils in 20 most likely target areas of the country for use in case of atomic bombing.

Recent history of wars and disasters has shown how dependent we are on paper service at such times. During the London blitz, for instance, paper cups were rushed to Britain for use in feeding persons forced into raid shelters.

The paper cup and container industry's action is intended first to assure an early withdrawal of civil defense supplies that might be diverted to other critical needs, and second to avoid haphazard local stockpiling of small quantities. In this second purpose, the industry has received the warm approval of federal civil defense authorities.

Encouraging preparedness, yet discouraging small scattered stockpiling of supplies has been the contradictory problem facing federal, state and local civil defense planners.

Controlled stockpiling, such as that of the paper cup and container makers, will prevent a dead loss of products since the industry retains ownership and will ultimately reclaim the stores if no emergency comes.

Your Shade Trees

(*From page* 17)

also charged with electricity but of opposite polarity. Only the atmosphere between the cloud and the ground prevents the union of the two.

As the cloud moves along, the electricity in the ground follows underneath trying to get to the cloud. Any object on the earth's surface, such as a tree, offers less resistance to the electricity than the atmosphere which surrounds it. As a result, a charge of electricity is accumulated on and about that tree. When enough electricity has accumulated about the tree to break down the resistance of the air between the tree and the cloud, a stroke of lightning takes place and damage to the tree results.

The purpose of a lightning rod is to provide a safe path for the bolt of lightning from the cloud to the earth. A lightning rod cannot *prevent* a tree from being struck; but merely conducts it safely to the ground when it occurs without passing through the tree. Furthermore, lightning rods *do not attract* lightning bolts.

The following rules should be observed when a lightning rod is installed in a tree:

1. The rod or conductor should be a loosely woven copper mesh cable. This is more satisfactory than a solid wire because it presents more surface than a solid wire of the same size.

2. A single conductor should be run from the highest part of the tree to a ground connection. If the tree has some large branches, conductors should be run to the highest point on such branches and joined to the main "rod."

3. The top of the rod should

(*Turn to page* 36)

THE COMMITTEE ON Elections to nominate officers for The American Forestry Association for 1953 is now accepting nominations from the membership. Deadline is November 1. E. P. Stamm of Oregon is chairman of the committee, with V. L. Harper of the U. S. Forest Service, Washington, D. C. and Dr. R. J. Preston, Jr., of North Carolina State College as the other members. Suggestions for the committee should be addressed to the Committee on Elections, The American Forestry Association, 919 17th Street N. W., Washington 6, D. C.

Your Shade Trees

(*From page* 34)

terminate in a sharp point, or in the case of woven mesh cable, the end frayed out about eight inches at the tip.

4. The rod or conductors should be fastened to the trunk of the tree in such a manner as to allow for the future growth of the tree, as well as the swaying of the trunk in a wind storm.

5. To attach the rod to a tree, the use of special fasteners is recommended, except on the upper branches where copper nails driven through the mesh cable three feet apart should be used.

6. The ground rod, to which the upper part of the cable is attached, is one of the most important parts of any lightning protection system. The conductor on the tree should be extended along the ground in a trench six inches deep to a distance just beyond the branches, where it is securely fastened to the ground rod.

The purpose of leading the conductor along the ground is to pick up the ground current accompanying a lightning flash near the surface rather than deep among the roots. This ground rod lead should be directed to low and moist soil if possible. For large trees several ground rods, evenly distributed around the tree, should be used. To prevent lightning from jumping from a tree to a nearby house, the ground wire should be connected to the water pipe system of the building. Otherwise, a difference in potential between the house and the tree may cause a side flash.

7. Joints and splices should be as few as possible. Where feasible, soldering of joints is recommended.

Lightning rods should be checked every four or five years to see if the connections are tight.

With a properly installed lightning system on your tree you are assured peace of mind when the artillery of the sky lets loose.

Forestry Education

(*From page* 12)

ing a Forestry-Horticulture Building at a cost of $769,497. This building, equipped with highly specialized facilities, is now nearing completion. This building strikingly emphasizes

the importance that is being placed today on forestry education at a state-supported institution of higher learning.

This summer the School of Forestry contemplates moving its staff and facilities from crowded quarters on the third floor of ancient Ricks Hall to the commodious new building.

Graduates of the School of Forestry now are employed in at least 24 states in this country and in Liberia and South America. The current student body includes representatives from a dozen states and foreign countries.

More than 82,000 acres of school forests are now available for field instruction and research. There are also three permanent field camps. The Hofmann Forest, located in Jones and Onslow Counties, N. C., is composed of approximately 80,000 acres and is the largest outdoor laboratory of its kind in the world.

The George Watts Hill Demonstration Forest is a tract of 1500 acres located 16 miles north of Durham, N. C.

The Richland Creek Forest of 300 acres is located four miles northwest of the North Carolina State College campus and is being developed into a model farm forest for field instruction.

The Long Creek Forest of 11,000 acres is owned by Mrs. Elizabeth D. Reynolds of the Reynolds tobacco family, and is located in a mountain area 18 miles northeast of Elkin. It is used as a sophomore summer camp.

The school nursery, located on the campus, is fully equipped for instructional purposes and for the production of planting stock.

As a state, North Carolina is realizing more and more the tremendous stake it has in forestry and its related fields. Not only does the State lead the nation in the production of wood furniture and hardwood plywood, but it has the country's largest number of sawmills, ranks high in the production of pulp and paper, and is a pioneer producer of lumber.

The wood-using industries employ more than 85,000 persons, making it second only to textiles in the number of wage earners.

But those who know the forestry situation best in North Carolina know that theirs is a job that is far from being completed and that continuous work must be done to protect and conserve and replenish one of the State's most important natural resources—its forests.

Books

When ordering books—reviewed on this page *or* listed in The Bookshelf—remember that your AFA membership entitles you to a ten percent discount. Order through the Book Department, The American Forestry Association, 919 17th Street N.W., Washington 6, D. C.

Forestry in Farm Management, by R. H. Westveld and Ralph H. Peck. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Ltd., London. 280 pages, illus. Price $5.

This second revised edition combines basic principles with new forest techniques and equipment which have made farm forestry work easier, cheaper, faster and generally more efficient. Professor Westveld presents an unparalleled treatment of these principles and policies that are applicable to all sections of the United States. There is up-to-date information on power saws and tree planting machines, new preservatives and methods of using them, new shearing techniques, and numerous other helpful data. The author also shows how to improve and perpetuate existing farm forests, how to make trees into valuable products and how to make the best use of wood, how to market farm forest products and how to keep farm forest plans and records.

How to Know the American Mammals, by Ivan T. Sanderson. Published by Little, Brown and Co., Boston. 164 pages, illus. Price $2.50.

This popular-price field guide is a boon for everyone who wants to know the nature and habits of American mammals. With 183 black and white illustrations, 25 color plates and 10 full pages of animal tracks, it is also a valuable aid to their practical identification in the field. It is completely authentic and scientifically accurate without being too technical for an amateur.

Irrigation Engineering (Volume I), by Ivan E. Houk. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Ltd., London. 545 pages. Price $9.

Written by one of the best men in the field, this volume treats agricultural and hydrological phases of irrigation in a comprehensive, up-to-date manner. Brief summaries of the more intensive field and laboratory investigations on irrigation completed to date are given, along with references to important source material. The author also supplies helpful, practical data essential to engineers, agriculturists, and others interested in irrigation problems.

Special attention is devoted to advances made during the last few years on soil moisture, wilting conditions, snow surveys, runoff forecasting, and others.

Slash Ranch Hounds, by G. W. "Dub" Evans. Published by the University of New Mexico Press, Albuquerque. 244 pages, illus. Price $4.50.

Three things combine to make this book a natural for sportsmen, dog lovers and students of Southwestern Americana; the Brownies, as one or more hounds in the Evans pack have been called through three generations of the Evans family; Slash Ranch, in the heart of some of the best lion and bear hunting country in the Southwest; and G. W. "Dub" Evans, the author, a famous lion and bear hunter, guide, rancher and one-time state senator. This is a hunting story in which the miracle of hound sagacity is pitted against the mystery of scent as told by a master hunter and master observer.

Union Bay, The Life of a City Marsh, by Harry W. Higman and Earl J. Larrison. Published by the University of Washington Press, Seattle. 315 pages, illus. Price $4.

The story of Union Bay is one of an intriguing relationship between man and wildlife. Birds, animals and plants live harmoniously together in a marshland around which man has built a giant city.

Within the sound and path of thousands of people and machines, the wildlife community feeds, reproduces, combats living enemies, and fights the weather. The city and the marsh seem oblivious of each other, yet their rivalry is strong. The reader will become a part of the outdoor marshland so poignantly described by these talented writers who have the background to understand a big city marsh.

King's Arrow Pine

(*From page 23*)

ered material goes into clapboards and the other third into roller squares. Stickers used in piling lumber do not need to be of entirely clear stock.

This is presumably the last chapter of the grand old story of white pine. These trees are found in a great forest of spruce, our premier newsprint wood. So this forest is managed primarily for spruce. When the white pines are gone, they will not be replaced by another crop of white pine. Their place will be occupied by successive crops of spruce for the ever-widening demand for newsprint.

Thus the King's Arrow pine, famous in early timber history, is only temporarily taking its place in supplying our lumber needs again. But what beautiful. wide, long boards!

Forum

(*From page 2*)

those that grow up in narrow areas adjacent to them. I believe this to be quite contrary to "It would also help if the height of poles used was governed somewhat by the size of tree along the right of way."

I am familiar with what is being done in this field because I have a degree in Municipal and Recreational Forestry, have worked professionally as a tree trimmer, taught it for years in a C.C.C. program and worked for a number of years in the engineering office and in the field for a telephone and power company.

I know both sides of the problem and how silly one's idea of what the other should do can be. Some of them were in that article. Such as the one, "If the road is already lined with trees, why not set the poles back of the trees and avoid the mutilation which results when wires are strung."

The person who wrote that never had to walk up and ask a lady if she minded if the 'phone company put a hole in the middle of her lawn in front of her living room window, and since it was an "angle pole" three would have to be an anchor with a guy wire running to it by the car port and another over there in her flower bed. Nor did the person have to get a set of Right-of-Way papers for every single lot a phone line crossed and set up condemnation proceedings for those that didn't want theirs crossed.

Believe it or not, most people would much rather have the trees trimmed in front of their houses than have a pole in the middle of their lawn.

Writes Merwin W. Humphrey, professor of forestry at Pennsylvania State College:

The May issue of AMERICAN FORESTS is another well-rounded issue which suits the instructor in forestry. I want several copies

in the library available for required reading. The "Do We Need Federal Forest Regulation" is of particular interest, but I also wish students to see the entire issue.

J. P. Kinney, former chief of the division of forestry, Office of Indian Affairs, offers below a dissent to the argument for federal forest regulation as proposed by Edward C. Crafts in the May issue (page 26). He says:

I have read with great interest the "Yes" statement of Edward C. Crafts, assistant chief of the Forest Service, with "Do We Need Federal Forest Regulation?"

Mr. Crafts frankly admits that forest regulation of any kind may be characterized as "an impairment of individual freedom," but welcomes, or at least accepts, this "impairment" as a necessary incident of the intricate economic development of modern life. That there is a strong current in the United States, and in the world at large, toward the restriction of individual liberty of action is obvious to any thoughtful man or woman.

This tendency toward the accentuation of governmental control over the activities of citizens should not be thoughtlessly resisted, but an enlightened citizenship should recognize that it might be unwise to take from the individual rights and privileges which may be essential to the highest realization of personal satisfaction and public benefaction.

Mr. Crafts refers to the fact that about 16 states already have regulatory laws but states that all fall short of the "standards visualized by the federal government" and bewails the fact that "only about one-half of these involve any compulsion at all." He expresses the opinion that the enactment of regulatory laws and resolutions favorable to public regulation by civic, social, professional and industrial groups may have been largely due to a desire to forestall federal participation in forest regulation.

He recognizes that fear of federal regulation rather than conviction as to the virtues of any form of regulation was largely responsible for the said laws and the concessions by various groups and associations as to the need of regulation. Fear of a worse evil and not faith in state regulation has guided their conduct.

Mr. Crafts' quotation from *Fortune* magazine merely supports the highly debatable assumption that more potatoes can be produced under regulatory measures than can be produced through the encouragement of private initiative. While some advantages have been derived from the extensive regulations imposed upon the American people during the last two decades, there have also been many failures to achieve the desired results and not a few disastrous consequences. The entire record has not been such as to afford the American people unbounded confidence in the merits of regulation as a panacea for social or economic disorders.

It is unquestionably true that "thinking Americans now pretty largely recognize the public interest stake in the individual forest enterprise." It is also true, and possi-

(*Turn to page* 45)

New Additions to The American Forestry Association's

NATIONAL ROSTER OF MEMBERS

NEW LIFE MEMBERS

ALABAMA: Robert A. Russell.
CALIFORNIA: J. D. Zellerbach.
MASSACHUSETTS: Reginald W. Bird, Oliver A. Lothrop, M.D.
MINNESOTA: Jay C. Hormel.
NEW YORK: E. D. Church.
OREGON: Nils Hult.
SOUTH CAROLINA: Guy V. Whitener.
TENNESSEE: James C. White.

ANNUAL MEMBERS

ALABAMA: Phil Banks, Russell Ballard, F. A. Corte, Chase Nursery Company, Inc., Blanche E. Dean, Joseph H. Fox, Dr. J. A. Gorman, Bess Herron, Joseph J. B. Kennedy, George John Mitchell, M.D., Dr. H. L. J. Marshall, Alfred Newman, T. A. Walthall, Ralph H. Whitlark.

ARIZONA: Floyd B. Bralliar, John C. Butala, Ernest Beyer, Richard E. H. Duisberg, M.D., Ernest Greene, Gordon L. Gilbert, P. Paul Zinn, M.D.

ARKANSAS: Karlton H. Kemp, M.D., E. L. Keith, Mrs. M. D. Ogden, Sr., E. Gus Siadous, O. E. Westfall.

CALIFORNIA: Frank Araki, Nona D. Awalt, Alexander Allen, Dr. James R. Armstrong, Mrs. Gunning Butler, A. Harry Bliss, Mr. & Mrs. B. J. Bierke, George M. Campion, M.D., S. R. Cauvel, Josephine Cowan, Curtis P. Clausen, Mrs. James Coonan, J. W. Copsey, Betsy W. Clifford, H. D. Cooper, Robert H. Calderwood, Marvin Charleston, Thomas F. Chace, James W. Cooper, James S. Daniels, Dorothy Decker, H. M. Elliott, M.D., Elliott Junior High School of Altadena, Edwin C. Ehmke, Roger H. Grantham, Dale Griggs, Gosslin - Harding Lumber Company, Norman H. Gay, Allen Griffin, M. B. Graybill, M.D., Louise J. Gordy, M.D., Mrs. Reeve Gould, Donald Williams Hamilton, Jr., Arthur W. Hesser, J. James Hollister, P. H. Heersema, M.D., Fred T. Huntington, Eugene R. Harrison, Robert Mayo Hayes, Robert L. Jones Funeral Home, Max Jones, Joseph J. Jelinek, M.D., William A. Jamieson, Milton Katz, Edward B. Kollert, Portia Kubicek, Carroll A. Lind, G. Robert Loveall, M.D., Homer Leach, Dr. R. Merton Love, Frederick Mazain, Eva McFarland, Gordon C. Maxson, N. Kenneth McElmurry, M.D., Jerry L. Myers, Eugene T. Morrison, Jessie E. Murray, James G. Mason, J. F. Mackenzie, Richard Nelson, Kermit A. Noble, Dick Potter, H. Louise Peterman, Irene H. Perstein, Alice Potter, M.D., Patricia M. Powers, John Pierovich, Earl Rosecrans, Rosicrucian Research Library, Dr. Paul H. Reinhardt, Clark L. Rockwell, Edgar Alan Rowe, Mildred Smith, James H. C. Smith, Charles E. Sones, Hurford Sharon, H. E. St. Pierre, Dr. Edward Shapiro, D. H. Trowbridge, M.D., James Z. Taylor, Frances T. Thayer, Dr. Grace M. Talbott, Richard J. Trockman, M.D., Laura Kerr Veiller, C. M. Woodward, Roy O. Wells, Irma Weill, Margaret Webb, Willis H. Weichhart.

COLORADO: Henry Anderson, George C. Back, Henry Bell, III, Mrs. K. S. Burkett, Ralph M. Girling, Newell Grant, Glenn Kinghorn, Mrs. J. S. North, Pitkin County Library of Aspen, William F. Reipschlager, Dr. Robert W. Virtue, George E. Weaver, Edward L. Wood.

CONNECTICUT: Fred H. Beers, Frank E. Bohman, Faith Baldwin, Bruce Harle Blood, John E. Caskey, Louise Dykes, Mrs. Raymond V. Dyba, Ivar P. Elfgren, Amos E. Friend, M.D., Albert H. Gledhill, Lulu E. Granniss, H. R. Haynes, Paul L. Herbert, John Hersey, Thomas J. Leary, John S. Mackiewicz, J. Daniel McKenzie, Mrs. Chris H. Neuswanger, F. W. Pinches, J. G. Pennypacker, E. D. Robinson Sales Agency, Mrs. Reinhard Siedenburg, Dr. S. G. Weiss, Stanton R. Winslow.

DELAWARE: Barbara C. Bach, Arne E. Carlson, D. G. Durham, M.D., Mrs. H. B. duPont, Grace E. Hastings, G. B. Street, Dr. T. W. Stiegler, Joseph A. Vogel.

DISTRICT OF COLUMBIA: Clarence C. Case, Henry P. Erwin, W. L. Hill, K. H. Landenstrass, C. F. W. Muesebeck, Dr. Daniel Prager, Jerry G. Smith, William N. Schaefer, Mrs. Ray P. Teele.

FLORIDA: W. J. Baldwin, W. Worth Cooper, D. W. Davis Nursery, The Davison Chemical Corporation, Mrs. Charles F. Frey, Werner Fisher, Col. Walter A. Hazelwood, Franklyn Jones, Mrs. George Leitner, Dr. M. C. Raffenberg, J. R. Spratt, Rabbi Richard E. Singer, Mrs. E. H. Tison, A. Bruce Zetrouer.

GEORGIA: Anita S. Armstrong, Louise W. Brown, Clarence C. Butler, M.D., George G. Bailey, Mrs. Nan Lee Corless, William C. Coles, Charles Eberhart, M.D., Jordan Gardner, J. E. Gunby, Miles S. Koger, Ollie L. Knott, J. T. McKoy, Eliza Hill Martin, Mrs. L. B. Morgan, Daniel MacDougald, Floyd W. McRae, M.D., Emily Orr, Fritz Orr, Jesse H. Rigdon, Walter Rylander, Avery Strickland, Dr. Willis A. Sutton, Hughes Spaulding, James Silver, Robert B. Troutman, Judge Marvin Underwood, Hollis L. Winn, Vincent F. Waters.

IDAHO: Floy Fiet, Claude I. Horton, Warren C. Loel, Russell & Pugh Lumber Company, L. J. Randall, Vern Snell.

ILLINOIS: Lyle D. Anderson, Martin G. Anderson, Murray L. Brawner, R. C. Breeden, Philip N. Boyle, Mrs. Lyman Black, Edward Benning, Harry J. Bettendorf, Jay W. Bissell, James B. Clarke, Theodore W. Curtin, E. A. Canterbury, M.D., William Cloud, Dr. A. J. Carlson, Valentine W. Darst, Mrs. Charles W. Dukes, Taylor E. Decker, Walter E. Elder, Paul B. Ellis, Walter Ferguson, H. H. Grace, Jr., Wilbur R. Gemmel, D. E. Goldrich, Frederick C. Holtz, Jr., June Harland, Robert R. Herbst, Myra S. Hartshorn, Charles K. Ide, H. M. Jenkins, Earl H. Kane, Earle H. Loopman, Harold Kiehm, A. J. Kelley, Leesley's Nurseries, Morris Lang, M.D., Edward N. Lee, Dr. Michael L. Leventhal, Lynn Miller, John L. Marsh, John McW. Marsh, Rear Adm. L. A. Moebus, USN, John Mecklenburg, Mrs. Michael L. Mason, Edgar H. Nelson, Rubin O'Daniel, Charles A. Porter, Dean A. Pack, Mary Anne Player, Richard C. Reid, Paul H. Stamberger, I. Seltzer, Arthur D. Sellers, Mrs. Herta Stunkel, Charles K. Stulik, M.D., E. J. Shalgos, M.D., Hannah Schuster, D. S. Tyler, Chris Tarran, Charles K. Teare, Ronald Trauth, Edith Van Duzer, Dr. Anders J. Weigen, Whitford Nursery, Mrs. Edward K. Welles, Harlan M. Wood, Ethel Westra, J. Frank Ziegler.

INDIANA: Roy E. Anderson, Dr. Clinton J. Bushey, Amos C. Bateman, A. V. Bailey, Geraldine Carlson, Dr. D. W. Conner, I. W. Clem, Frederick Cahn, Chase Derbyshire, Clayton E. Eash, George C. Frownfelter, John E. Flynn, Charles E. Geckler, M.D., Francis E. Hudson, Rex L. Hidy, Ben Howe, M. Kip Hine, Jr., Dr. Charles F. Leich, Napoleon Miles, Thomas Needham, Northern Handle Association of Fort Wayne, Mrs. C. H. Roth, Jessie G. Richer, David L. Stormont, Janice Shoup, T. E. Shaw, Russ Trenholme, Dr. Dale G. Treadwell, John W. Van Joy, John E. Walley.

IOWA: E. W. Blumenschein, Eugene Frost, C. H. Greenley, Mrs. Ruth E. Hein, Mrs. D. G. Kolarik, Leslie Nelson, Dr. Paul C. Otto, Harry Ryan, Dr. R. E. Rasmussen, Hubert Strandberg, Leland K. Smith, Kinzie H. Wimer.

KANSAS: Don M. Baker, Sylvester Chance, R. H. Dodge, Holly C. Fryer, Jean Hatfield, Dr. S. Ann Wiegers.

KENTUCKY: Arthur L. Cooper, M.D., Ray V. Conkling, Richard Leven Drye, Dr. Carl C. Howard, Rev. Ethel E. King, Arthur J. Muller, M.D., H. D. McBrayer, Mrs. James W. McKee, Charles W. Morris, M.D., Carl Ray Company, O. A. Taylor, H. H. Wilson, E. H. Williams.

LOUISIANA: Mrs. Joseph E. Blum, Bertie S. Berry, Thomas W. Davenport, R. L. Emery, Jr., Dr. Jared Y. Garber, Beverly F. Griffin, Malcolm Lee, C. A. Lomax, Malcolm K. McKay, Jr., J. H McClendon, Poulan Saw Company, Inc., William E. Richard, Jr., Mrs. Edwin Smith, Dr. Gordon W. Slemons, Ola Mae Word, Mrs. George C. Westfeldt, Jr.

MAINE: Warner S. Chandler, Jr., J. H. Darlington, Angus E. Humphries, Rev. Thomas J. Joyce, Don J. Knowlton, M.D., Henry F. Merrill, C. Neal Merrill, Thomas C. Wales.

MARYLAND: Eric Arlt, Frank B. Brown, J. Hammond Brandt, Mrs. Joseph D. Brown, Dr. John W. Chambers, Ellsworth B. DeCorse, Gerard Hoelk, F. Webster McBryde, Mrs. E. G. Purvis, Sister Helen Constance, George A. Stover, Dr. Paul N. Stevenson, Mrs. Edward E. Steiner, John F. Thurlow, M.D., Mrs. Margaret B. Todd, Sophia Thelning, Mr. and Mrs. Robert L. Wilson.

MASSACHUSETTS: Russell Bickford, Theresa E. Black, Gilbert A. Bliss, Martin K. Bovey, Norman I. Bearse, Mrs. Nathan Crowell, Loring Conant, Dangelo Landscape Service of Newtonville, Dr. Alfred L. Duncombe, Everett J. Ford, Dr. Clifford Franseen, Mrs. John S. Farlow, Jr., James E. Grainger, M.D., Dr. Harry B. Goodspeed, Mrs. Harry K. Gardiner, Hedstrom Associates, Inc., F. Gilbert Hills, Stephens Hopkins, Robert E. Ingersoll, M.D., James L. Jenks, Jr., Dr. Johnsons' Camps, Hugh Mahoney, M.D., Chester Encell Nichols, II, Granger Wood Norwood, Clayton B. Obersheimer, Edward C. Remick, Dr. Joseph Ross, Dr.

(Turn to page 43)

John A. Reidy, Mrs. Richard Saltonstall, Mrs. J. M. Spear, Mrs. M. N. Smith-Petersen, State Teachers College of Fitchburg, Hugh Tatlock, M.D., Frank C. Whitmore, W. V. Wallburg.

MICHIGAN: G. M. Baranyk, Dan J. Bulmer, M.D., Gerrit J. Baker, William W. De Golia, Calvin Estes, Parker Frisselle, L. C. Fox, Donald K. Griffin, Edmund J. Guzman, P. A. Gemmell, John Howard, Don Houlden, Roy W. Hooker, J. V. Jenks, K. L. Jones, Ralph Jaroche, Krieger's Wholesale Nursery, Robert V. Kerley, Gust A. Lucke, Jerry Luke, William R. Lebold, Mrs. Neil McMillan, Jr., D. R. McLellan, Charles R. Prucha, Ralph L. Polk, III, Douglas W. Ramsay, Thelma Sonnenberg, Harley C. Waitman, E. P. Whiteside, Walter G. Webb, Moise Youngman.

MINNESOTA: A. A. Anderson, Paul Bussard, John L. Currell, Ross A. Easter, Edward L. Foss, Howard Lake & Victor Nurseries, Clara Lilley, Daniel L. Lappala, Frank J. Liebl, R. C. Luepke, Whitney MacMillan, Melvin Rognley, Maxwell Sargent.

MISSISSIPPI: Rev. Christian L. Baker, G. D. Bilberry, Paul F. Henzler, W. J. Morris, Mrs. O. Z. Smith, D. O Secrest.

MISSOURI: Frank Blair, Jr., N. Ray Carmichael, Bertha Nan Carroll, John C. Dods, H. Towner Deane, W. R. Edwards, V. G. Gabriel, Janet M. Primm, Uel E. Puett, Edna Robinson, Henry J. Stanton, J. Lawrence Siemers, H. E. Sleight, Harry A. Unrath.

MONTANA: James Armstrong, Etta M. Armstrong, Dr. A. K. Atkinson, Gladys Baguet, Verne Fairbanks, Arthur Fehrenkamp, J. M. Harrington, Minnie R. Lee, E. F. Ladwig, William R. Pentilla, Melbourne C. Parker.

NEBRASKA: Benson High School Library of Omaha, Mrs. John A. Cihlar, Mrs. John A. Graff, I. N. Morgan, D.O., Dr. F. D. Major, Werner Stutheit.

NEVADA: E. R. Greenslet.

NEW HAMPSHIRE: John P. H. Chandler, Jr., Charles Dube, G. A. Day, George Harold Edgell, Paul L. Foster, Bess C. Haskell, Dr. John B. Holyoke, Richard A. Leavitt, Mr. & Mrs. Richmond Mayo-Smith, Jr.

NEW JERSEY: Henry M. Althoen, Arthur P. Beyba, Joseph C. Borrus, M.D., A. E. Bythewood, Thomas H. Benton, Maurice Borow, M.D., William C. Barr, Wadsworth Cresse, Jr., Rev. Charles H. Cappel, Margaret Conover, Mrs. E. L. Coffey, James H. Cooper, Ronald Cosolaro, Charles R. D'Amato, M.D., Dr. A. Kenneth DeHart, Mrs. William S. Dubois, Paul de Marrais, Mayo B. Doyne, Catherine Farmahis, Augustus Gibson, M.D., Dr. Frank M. Galioto, W. F. Geffken, Ernest A. Horsfall, Jack Holland, Howard B. Hensel, Robert C. Jansky, John W. Kasten, Rufus R. Little, M.D., Leo J. Landy, Horace B. Loder, M.D., C. H. LeRoy, Mrs. A. Moore, Lawrence H. Mitchell, Mrs. Ackerson Mackerley, Jr., Glenn Miller, Jr., William R. Ost, Effingham Pinto, Mr. & Mrs. Clifford W. Parsells, Joseph Pache, Herman S. Porter, Peter B. Putnam, Giovanni Puccinelli, Richard J. T. Rolman, Daniel A. Roser, Robert A. Stokes, Otto Speck, Mrs. William Serencse, George W. Steward, Jr., John H. Strasser, Herman Simon, Hubbard A. Seward, Earl Stage, M.D., Henry F. Stockwell, A. Sochacki, M.D., Capt. F. P. Snook, Elizabeth C. White, Maj. Joseph F. Wildebush, Rachel R. Williams, M.D., Dr. G. N. A. Wescoat.

NEW MEXICO: Ethel J. Britton, Dr. James H. Baxter, Jimmy Lamb, R. M. Noll, D.O., Jackson W. Space, C. W. Via, A. Venegas.

NEW YORK: B. J. Adams, Allegheny Forest Products, Inc., of Jamestown, Pauline Arthur, Sidney Altneu, Mary A. Burt, Steve Brody, Mrs. Edward A. Brady, Curtis Booth, Ralph D. Bickford, L. L. Berger, Mrs. E. T. Babcock, John J. Buchholtz, Richard C. Barkstedt, Victor Borella, Boys Athletic League, Inc., of New York, Harold W. Cady, Conewango Valley Hardware, Norman R. Crum, Ruth M. Curtin, H. S. Clemens, Marion C. Clark, Nelson W. Cornell, M.D., Miss U. Corning, John Dulinawka, T. E. Detcher, James C. L. Doolittle, Joseph W. Denneen, Mrs. A. Dauphin, Mrs. George F. Duvall, Alan Dunn, Lloyd Erskine, Harold T. Edwards, Ethel Fries, Andrew J. Fisher, Harry E. Faten, Mrs. Ralph N. Foster, Dinah Friedland, F. Belle Figger, Rev. Fergus M. Fulford, Irma E. Fueslein, Aden L. Gokay, Dr. Louis A. Goldstein, Roland J. George, C. Gillette, M.D., A. M. Horton, John C. Hanson, Charles B. Hill, Jr., M. Everett Hillman, Harvey N. Houseknecht, Eric Hall, Burton R. Humes, Annaleida Van'T Hoff, Richard L. Holmes, Dr. L. Edgar Hummel, T. G. K. Harding, William Harrer, John H. Heminway, Dr. & Mrs. Benjamin Horn, Rodney B. Johnson, Harold M. Jayson, Frank Jankowiak, Louis Kantor, Jr., David K. Kadane, Walter Kendall, Alan G. Kraemer, Alex H. Lundberg, Norman Long, A. J. Loman, Armon H. Livermore, Richard S. Lyon, V. Lomuller, Edwin R. Masback, Mrs. F. L. Merritt, Blanche C. Mayhew, Abraham Mandelstam, Mrs. R. Marshall, R. F. Mathews, Mario Montero, James S. Myers, A. C. Neely, Mrs. Verna Nelson, Mr. & Mrs. Benjamin Olney, C. G. Powney, Howard R. Patterson, Rutherford D. Rodger, Harry N. Reid, M.D., Clifford A. Rood, Edward C. Roth, Mrs. William D. Robertson, Mrs. Otto Reben, Mrs. Gertrude Rankin, Henry F. Raab, Paul E. Reiter, Lester Rabbino, Dr. Samuel Raymond, F. Clay Smith, Elmer J. Schall, Mrs. Robert C. Stanley, Thomas Schleich, Mrs. R. Stokes, Harry W. Smith, Jr., Walter W. Sturmer, Dorothy M. Snyder, Louis M. Sabo, Mrs. Griswold J. Sander, Max Schien, Wesley A. Strickland, Reginald T. Townsend, Veronica Tillyard, Dr. Herman Ullmann, The Van Yahres Tree Service, Inc., Emily H. Williams, Mrs. Gilman Williams, Mrs. Albert Wertheimer, Helen E. Walther, J. W. S. Winslow, Karl F. Wagner, Emily M. Waddell, E. J. Wetter, William Wyckoff, Milton Wallman.

NORTH CAROLINA: Dr. Stanley A. Atkins, John E. Bramlett, Harmon J. Bailey, M.D., H. H. Clark, Rubie Fay Cunningham, Kathryn F. Curtis, Misses April Yon and Robin Warner Collier, The Dair Specialty Company of Greensboro, Edgar D. Flowers, Mr. & Mrs. Nelson Jackson, II, Julian E. Jacobs, M.D., Dr. William F. Medearis, E. D. Mitchell, James B. Neely, Robert P. Phifer, Thomas J. Pearsall, T. E. Pickard, William A. Roseborough, Frank A. Shaffner, Margaret Shuey, J. Atwood Whitman, Franklin D. Winslow.

NORTH DAKOTA: Helen Brusven, Mrs. Elling Ellingson, O. L. Fixen, Vincent J. Kelsh.

OHIO: William P. Alexander, Akron Garden Club, J. P. Bocklet, Rudolph A. Bender, Jr., R. I. Blayney, Paul Benninghofen, George S. Beck, Mrs. Willard W. Brown, Roy K. Bussey, Jr., Walter J. Burns, Robert E. Becker, Dr. William Evans Bruner, H. M. Conklin, R. Dean Conrad, Bernard D. Crosby, Austill Chambers, Edwin J. Drewes, Harold A. Dawson, C. D. Dunlap, Doris Donohoe, William H. Deddens, D. Haydn Evans, The Exchange State Bank of Bloomville, E. Elford & Sons, Inc., Mrs. R. F. Ebinger, Harry S. Elliott, Friends Boarding School of Barnesville, Mrs. David K. Ford, Martha M. Fleischer, Tony F. Geizer, Michael Graf, William Geiger, J. S. Greenleaf, Iretta Glass, Everson Hall, Thomas C. Ham, II, Arthur E. Hurlbut, John F. Hellebush, Cornelius J. Hauck, J. B. Johnson, M. C. Kolczum, M. D., Fred H. Klaer, Jr., Eddie F. Kohl, Margie W. Koch, D. T. Kingsley, J. F. Kurtz, C. J. Kurtz, Jr., Don C. Kunze, Mrs. D. D. Kimmel, Mrs. Harold J. Kersten, Robert J. Lewis, LeWayne's Greenhouse & Nursery, Herman H. Lind, Frederick P. Metz, Richard L. MacFarland, M.D., B. W. Merwin, W. T. Mitchell & Son, Phelps Meaker, John E. Miller, Joseph P. Mull, Jerald L. Maus, A. L. Neiferd, Mr. T. D. Neil, P. G. Nierman, Ohio State Grange of Columbus, Oakwood Club, Ralph N. Pyrtle, Charles W. Pierce, Mrs. James Probert, Mrs. Charles Patch, Willard Parker, George J. Reed, Ward Rosenberger, Charles E. Stiffler, Genevieve E. Swallen, Marie S. Schaffter, Robert N. Solsberry, William J. Scheuerman, V. A. Schantz, David C. Spaulding, E. M. Sampson, Paul H. Swetland, Dr. Robert M. Stecher, Fred Strieck, Martha M. Sefried Marion Treiber, J. H. Thornell, Mrs. L. H. Tebbe, Dr. Frank J. Unger, Calvin Verity, J. E. Van Fossen, Rev. John Vogel, J. Paul Wilms, Morgan G. Winget, Mr. and Mrs. Walter W. Willis, Thomas A. Ware, Mrs. E. L. Worthington, Mary Ward, Carl Grant Wilson, Lauretta C. Young.

OKLAHOMA: O. S. Anderson, Jr., Henry Thomas Ballantine, M.D., Stewart Cronin, Winnie Dawson, Rex W. Evans, Jack L. Friendly, Ruth B. Hysa, Alene Justice Norton, Mrs. Ralph K. Odor, George R. Rea, John W. Steltzlen, Mrs. C. W. Terry, Oliver S. Willham.

OREGON: D. E. Anderson, A. Gordon Clark, Dr. C. A. Downs, Ernest E. Fischer, Earl F. Graham, Mrs. E. M. Hutchins, Dr. H. C. Harding, Hazel S. Jacobs, Klamath County School District, Walter H. Lund, Melvin M. Lewis, Marion H. Medler, Jerry Medcalf, Mrs. Millard Martin, William D. MacGibbon, Dr. H. Minor Nichols, R. L. Neuberger, Carl H. Phetteplace, George Ray, Jr., Don Riley, Milton B. Steiner, M.D., J. H. Van Winkle, Mary T. Williams, M.D., Mrs. Ira A. Williams, W. T. White.

PENNSYLVANIA: Charles C. Alford, Harry L. Acomb, David E. Albert, Ernest J. Burnham, Richard Brown, Mrs. A. Albert Bittner, Mrs. Jas. B. Borden, Edward W. Cleever, Elmer B. Cooper, John K. Class, Harry N. C. Chubb, William H. Coltabaugh, Jr., Ettalow M. Cain, Emily Deubler, Kenneth H. Donahoe, Lewis P. DeGeorge, H. C. Dixon, Howard H. Dana, Samuel Evans Ewing, III, Dr. & Mrs. MacKinnon Ellis, M. J. Escoll, John Finkbeinert, Richard B. Fox, Roy Frick, David D. First, Anthony Feyock, Quentin Graham, John R. Grubb, M. C. Gilpin, Charles E. Guibor, Mrs. George M. Hinckley, Carl A. Hummel, Mrs. William T. Hawk, Ruth Hecher, R. W. Hompe, Leonard Heid, Robert W. Haas, Mrs. Thomas B. Johnson, H. L. Jenkins, John G. Kuster, Arlene F. Kohl, James E. Kelley, Naomi C. Kloss, M. Paul Mains, M.D., F. W. Mankey, Jr., W. B. McIntyre, Harrison N. Mucher, Major Alfred A. Morris, H. B. Montgomery, James P. Martin, Gene Michaels, Paul E. Myers, Arthur McPeek, F. Richard Miller, Jr., Robert S. Mechling, Mr. & Mrs. George F. Martin, Jr., F. L. Olweiler, Elwood Pennepacker, Dr. & Mrs. Asa W. Potts, A. J. Reist, M. Eugene Reynolds, Grace L. Riethmiller, M.D., James J. Rankin, Mrs. James C. Rea, Ada M. Symington, Emma Stebbins, Mr. J. H. Schneider, Warner Spencer, Alver L. Satterlee, Berthold Strauss, George R. Snyder, Joe Smith, L. D. Snyder, Leonard M. Strunk, Grier Saunders, David J. Shanahan, Walter W. Trainer, Samuel Tatnall, Harvey F. Warner, Eleanor A. Weigel, T. Harry West, Fred W. Weiler, Jr., Samuel Wagner, G. R. Wentzel, M.D., Ruth E. Wetzel, Edgar Wolfe, John S. Witmyer, Dr. Robert E. Wise, George Woodward.

RHODE ISLAND: Charles J. Dipallina, John P. Hogan, MD., Mrs. Cyril V. Moore, C. Gordon MacLeod, Kermit R. Osberg, Marshall J. Root, Mrs. F. F. Rogers, Charles A. Sleicher.

SOUTH CAROLINA: L. W. Alford, W. G. Bishop, Newton T. Clark, Edith K. Eastman, William H. Moncrief, M.D., D. Austin Shelley, W. A. Shields, G. R. Wilder, M.D.

SOUTH DAKOTA: Dr. Robert C. Murdy.

TENNESSEE: Dr. Breen Bland, Mrs. Axel Brett, Robert S. Carney, Henry D. De Lock, Lawrence Hunt, Carl F. Hamar, Helen Jeune, Dr. Philip M. Lewis, S. A. Robert.

TEXAS: Hal S. Alcorn, Henry V. Aldrich, Joseph A. Abbey, M.D., R. B. Baldwin, William E. Brendle, Hart Brown, Dr. Jack M. Bickerton, W. Compere Basom, M.D., Betty Bradford, W. K. Clore, Joseph M. Canter, M.D., Hendrick Carter, Solomon D. David, M.D., Buck Farris Nursery, Mrs. Howard W. Ford, J. B. Green, H. A. Hodges, Judge J. C. Hutcheson, Jr., Mrs. Cornelius C. Kroll, C. C. Pool, Rev. & Mrs. Donald E. Redmond, Lewis H. Ruckert, Fred Slauson, Mrs. Robert E. Sneed, Thomas G. Saun-

(Turn to page 44)

Managing Your Woodland

(*From page* 29)

would hardly turn out enough clear volume to pay for the pruning.

Likewise, pruning will hardly pay off unless the pruned trees are allowed to grow, at the very least, for ten to 15 years at a relatively rapid rate per year. For maximum profit, at least eight to ten inches of clear wood (four to five inches in radius) should be laid on after the branch stubs have healed over.

The pruning of southern hardwoods is somewhat more difficult than the pruning of southern pines, and needs more study and care. In fact, there is much less detailed information available on the hardwoods than on the pines. In general, however, the basic considerations of pine pruning also apply to like operations on hardwoods.

Most foresters agree that the woodland owner should not prune more than 100 to 150 southern pine crop trees per acre; the remaining unpruned trees will usually be removed in intermediate cutting operations. Prune small or young selected trees —sound, straight, thrifty, evenly spaced and likely to make high-quality products. Such trees should not be larger than three to five inches in breast-high diameter. And prune close to the trunk, making sure not to leave branch stubs.

It is best not to prune more than two-thirds of the total height of the tree, or more than the lower one-third of the live crown. Prune a second time, if necessary, to produce at least one clear 16-foot log (this means pruning to a total height of 17 feet above ground, to allow for an average stump height of one foot).

Pruning should be restricted to trees at least 18 feet in height. Pruning open-grown trees to 40 to 50 percent of their total height is a conservative treatment that has no effect on their growth rate. In pine stands, the pruned limbs should be scattered away from the bases of the trees to prevent insect attacks and to reduce possible fire damage.

Pruning may be done at any time of year, but winter is probably best, particularly in small operations, or in hardwood stands. Pruning during severe drought may induce insect attacks. Trees with branches larger than two inches in diameter ordinarily should not be pruned.

Dead knots, on the average, do not heal over as quickly as live ones, but do heal over more rapidly when the cut removes the live collar at the junction of the stem and branch. Southern pines with branch cankers of the fusiform rust should not be selected for pruning if the cankers are within six inches of the main stem, because the stems are already likely to be infected.

It is good business to prune young, limby, open-grown slash and longleaf pines which later on are to be turpentined for a distance of at least eight feet above the ground. This avoids loss of gum production resulting from the knotty portions of working turpentine faces.

Scars from proper pruning ordinarily heal over quickly on southern pines and hardwoods. The Southern Forest Experiment Station recently announced that in its pruning experiments in old-field loblolly pine stands growing three inches in diameter every ten years, clear wood started to form four years after pruning small knots (one to one and one-half inches), and six years after pruning larger knots (one and one-half to two inches). The announcement also stated, "As soon as trees reach merchantable size, pruning should be accompanied by heavy thinnings to stimulate fast diameter growth and thus hasten healing."

The size, arrangement, and height of branches and stubs to be pruned usually determine the choice of pruning tools. Many different kinds of tools have been used—axes, saws, shears, trimmers, clubs, and other impact tools—and many have certain special merits. But saws generally have proved safest and most satisfactory. Only saws can produce uniformly close, flush, clean cuts that promote prompt healing.

Hand cross-cut saws with coarse incurved teeth are sometimes used to prune up to seven or eight feet. A light 12-foot ladder facilitates pruning to a height of 17 feet with a hand saw, but a pole saw is much faster. Pole saws that cut on the down or pull stroke, with stiff, curved blades, having five or five and one-half teeth per inch, are the best all-around tools for the southern pines and hardwoods. Handles are usually seven to 14 feet long, but may be much longer.

Pruning costs vary considerably. The average workman can prune ten southern pines per hour to a height of 17 feet. At current labor rates, total pruning costs should not exceed seven and one-half cents per tree. Numerous studies have shown, nevertheless, that costs considerably higher than this are easily justified.

Artificial pruning is the one method of converting low-quality, rapid-growing oldfield and understocked natural and planted stands of southern pines to high-quality timber in a minimum of time, for maximum profit. The southern woodland owner will do well to take pruning more seriously than in the past, and practice it not only in his pine stands, but also in his hardwoods.

National Roster of Members

(*From page* 43)

ders, Mrs. H. H. Thompson, LeRoy Wilkinson, W. G. Winters.

UTAH: John A. Adams, Jr., William E. Murray, Charles M. Shull, Jr.

VERMONT: Messrs. Waterman and Downs, Dr. John F. Daly, Ethel Edson, Herbert W. Johnson, Marlboro College, Maxfield Parrish, Charles G. Smith, Dr. Hiram E. Upton, Ford H. Whelden.

VIRGINIA: Mrs. J. C. Addington, Mrs. J. Nat Burnley, Mrs. Randolph Hicks Carter, H. H. Douglas, Laura V. Francis, Mrs. Stevens Hughes, Mrs. Vanda L. Ingham, J. E. Jones, Lt. Col. Richard W. Jones, Jr., Mrs. I. M. Nuckols, Coperton Preston, Mrs. Robert S. Pickens, Wilbur I. Patterson, Dr. McKelden Smith, Irving Saks, W. W. Venske, Matt P. Will.

WASHINGTON: R. W. Burrell, Ben T. Briggs, R. K. Behrns, Leo S. Burdon, John H. Berrian, Mrs. H. J. Carroll, Dr. Robert S. Evans, Betty Z. Franklin, Mrs. C. Henry Graham, Arthur H. Hoffman, M. J. Heidner, S. Thatcher Hubbard, Jr., M.D., C. S. Harley, Seth Knapp, June M. Kubin, Dr. Franklin E. Kells, D. A. Kuehn, K. C. Langfield, David R. Loree, William N. Myhre, M.D., Gordon W. Marsh, W. H. Matthews, F. Nagelvoort, D. E. Schuette, W. E. Stevenson, Charles E. Tulloch, Emma Vogt, H. V. Weigel, R. J. Wescott, M.D.

WEST VIRGINIA: A. B. Bowyer, M.D., Daniel Hale, M.D., W. C. Legg, Herman Marshall, J. H. McClintic, Philip Pennington, Emelda E. Paul, Ray Thorn.

WISCONSIN: Dr. Hattie G. Anundsen, D.O., Leslie H. Andrews, Robert A. Bailey, James E. Burgess, Eric H. Carlson, Donald F. Duncan, Jr., Mrs. Ollowene Fasmo, George Goldstein, Jr., Herbert F. Johnson, Jr., Emma M. Pagel, Ernest Rogers, Mrs. Glen Steuerwald, Albin M. Schlaak, Leonard Tarkow, Dale D. Wood, W. W. Wittmack, Norton Zarem.

ARGENTINA: Sr. Abel Saint.
CANADA: Harris Cox, Fred J. George.
CHILE: Hugo Weber.
HAITI: Emery A. Telford.
HAWAII: Alvin K. Chock.

Forum

(*From page* 41)

bly more advantageous from the standpoint of good forestry practice, that private owners of forest lands *now* largely recognize that economic conditions have become such that they can hope for an adequate financial return through the practice of conservative forestry.

Whenever the individual or corporate owner realizes that it will be profitable to keep a forest in a productive condition, it is quite improbable that the forest will be so managed as to leave it in an unproductive condition.

Even if we assume that "we have a situation in which we are gradually using up our capital growing stock of the larger and better trees," does it follow that under regulation this tendency will, ipso facto, be reversed? Will not intelligent private interest in the realization of higher profits from larger trees be as effective in restraining the cutting of small trees as would be the imposition of annoying regulations?

Surely regulation, per se, will not make trees grow faster or larger. Will regulation decrease the amount of lumber, or wood fibre, required to satisfy the annual requirements of the American economy? Will regulation of itself increase the proportion of softwood species? Will not the assurance of a higher profit from softwood species furnish the primary impulse for the production of such species?

Mr. Crafts believes we can secure sound forestry practice only through compulsion. He asserts that "this viewpoint is the concensus of informed judgment in the United States today." But the force of this assertion is greatly weakened by his suggestion that a great part of the endorsement of public regulation has been due to a desire to avoid Federal regulation.

No forester would question the accuracy of Mr. Crafts' statement that "Adequate forest resources and products are essential to national security." This is true also as to all items of food, clothing and shelter. Are we therefore to conclude that all production in American life of items suitable for food, clothing or shelter should be subjected to Federal regulation? Have not the efforts to control such production in the past been disappointingly ineffectual and abortive? Are we not yet ready to accept the lesson of experience that the economic activities of a nation of 150 million people are too widespread and too complex for bureaucratic control from Washington?

Mr. Crafts emphasizes the encouragement and support that federal regulation would provide for the states, but declares that the Forest Service "believes the federal government should have authority to step in and administer regulation meeting the standards if the states fail to do so within a reasonable time." Such a policy neither "encourages the capitalistic system" nor "strengthens local government."

The urge for federal forest regulation may arise from a "philosophical" aspiration that is less substantial and more deceptive than the "philosophical" reluctance to adopt a plan that runs counter to the economic and social principles that were ascendant when the Republic was established and that, in a large measure, have guided its course through a century and a half.

WASHINGTON LOOKOUT

By G. H. COLLINGWOOD

National forests were promised boosts in several items totaling more than one million dollars when the Agricultural Appropriation bill—H.R. 7314—passed the Senate on June 6. The fate of these and other changes in the bill as it passed the House on March 31 now awaits the recommendations of a conference committee appointed from the two legislative bodies. With the new fiscal year starting July 1, and the national conventions scheduled to meet in Chicago soon after, both houses will make every effort to clear this and other appropriation bills for early presentation to the President.

After brief debate and no separate vote, the Senate accepted the recommendation of the Appropriation Committee to add $200,000 to strengthen the fire-fighting organization on national forests. In defense of the increase, Senator Richard Russell, of Georgia, chairman of the subcommittee on Agriculture, pointed out that 1951 was one of the worst seasons for fire losses in the history of the Forest Service.

A billion board feet of timber were lost when more than 4000 acres were burned, and emergency fire-fighting obligations mounted to more than nine million dollars. This situation coincided with reductions in fire-fighting personnel, which he said were forced upon the Service when Congress authorized increased wages but no compensatory increase in appropriations.

As explained by the Senator, "the number of smoke chasers and firemen was not large enough to reach all the fires within a reasonable length of time. The fire-fighting organization really was not as strong as it was in 1950, because the increased compensation which had been voted by Congress for those federal employees had actually resulted in a reduction in the number. We had not increased the appropriation to pay the people as rapidly as we had increased the rate of pay that had accrued to the individuals."

National forest protection and management was further increased by $248,000 for the purpose of adding timber cruisers and others to the staffs necessary for additional timber sales on national forests. The increase evidently reflected pleas by Senator Guy Cordon, of Oregon, that the Committee recognize the need for early utilization of much dead timber on national forests which he said had been felled by storms or killed by insects.

White pine blister rust control was increased by $350,000 to a total of $3,650,000. Senator Herman Welker, of Idaho, declared this is not adequate for the job, but Senator Russell, supporting the Committee recommendation, explained that the increase over current funds will permit protection activities to be started on some 650,000 acres in northern Idaho, "where the disease is now spreading rapidly."

On recommendation of the Committee, and with no debate on the floor, $75,000 was added for the purchase of lands for inclusion in national forests, as authorized by the Weeks Act of March 1, 1911. This action is of special interest in view of the opposition to all forest land purchases, expressed by the House Committee on Appropriations when this bill was reported to that body last March.

PARKS FOREST CHIEF—Lawrence F. Cook has assumed duties as chief forester for the National Park Service. He succeeds John D. Coffman, recently retired. Mr. Cook has been with the Park Service since 1924 and has been assistant chief forester since 1937. He is author of the publication "The Giant Sequoias of California," published by the Park Service in 1942.

Under authority of other acts, $141,680 was added to permit the purchase of lands in nine national forests in California, Nevada, and Utah. No one commented on this amendment which directs use of the appropriation "for the acquisition of land to facilitate the control of soil erosion and flood damage originating within the exterior boundaries of (the above named) national forests."

No dollar sign was attached to what can be a major saving to the Forest Service program for fire-prevention publicity, when that item and the employees under it, were ex-

empted from the blanket cut of ten percent imposed upon most other items in the bill. Senator Wayne L. Morse, of Oregon, introduced the amendment, and in his supporting statement made reference to Public Law 359, approved May 23, giving the Forest Service a copyright in the use of the name "Smokey Bear."

This, he explained, is part of a campaign for forest protection which the National Advertising Council has cooperated in sponsoring during the past 17 years. He classed it with the Council's Government Defense Bond drives and the fact that each is financed largely by local industries. With regard to the program for protection of forest resources, he said: "Over 95 percent of the cost is financed by grocery stores, streetcar companies, and many other community-minded organizations."

NOMINATION FORMS AVAILABLE—The American Forestry Association now has available for those requesting them, copies of the nomination form to be used in submitting candidates for its annual Conservation Awards. Deadline for nominations is August 1, and those having individuals they wish to place in nomination are urged to write promptly for copies of the standard nomination blank. Address: The American Forestry Association, 919 17th Street N.W., Washington 6, D. C.

This was the last amendment to the Forest Service section and was passed by a voice vote a few moments after Senator Morse was turned down in a proposal to exempt fire-fighting personnel from the ten percent cut which was voted for all Department employees.

No, No, Hodges . . . not "DUCK," but TIMBER, T-I-M-B-E-R!

Editorial

THE BRIGHTER SIDE

Would you like to turn your back for a moment on the prevailing gloom, be it real, impending or imaginary? Reflect then on an increasing weight of developments which can only be interpreted that, for all the cries of "wolf," forestry may well be here to stay. This brash reasoning becomes more credible as every visit of the postman piles higher substantiating items from educators, industry, state and federal spokesmen, even bankers.

Take Wade Lucas' report on *Forestry Education in North Carolina* (page 10). Despite the increased numbers of youth entering the forestry profession, necessitating an expansion in the state's educational facilities, this year's record class of graduates had a choice of three job offers each. Nationwide, the yearly number of forestry graduates continues in excess of 2000, there is a corresponding increase of specialists emanating from graduate school, and all who wish it are finding lucrative jobs beckoning.

From the Southeastern Forest Experiment Station at Asheville, North Carolina comes word that there are now more than 1000 technical foresters in the Southeast alone, and their numbers are constantly increasing. A parallel situation prevails elsewhere around the country. More and more are these men being called upon to recommend and carry out forestry programs on not only public but private lands whose owners a few years ago did not hesitate to clear cut and burn. Thus the proportion of forest land dedicated to good management practices is decidedly on the uptrend.

Take a look at activities on the forest industry front. Look askance, if you will, at industry's motives for becoming so conservation conscious and chest thumping in recent years, but it's difficult to shrug off the fact that these one-time cut-and-get-out disciples are investing millions of new dollars in pulp plant developments in the heart of areas where ten years ago wolf criers were bemoaning the impending death by gluttony of our timber resources. The year 1951 saw four plants in Florida alone begin to sink 60 million dollars into new plant construction.

Yes, it's comforting to know that industry is willing to risk so sizable a chunk of its bankroll on the premise that enough wood can be grown to keep such hungry mills running on a sustained yield basis. And it's a shot in the arm to forestry, too, to learn that industry is further backing up its investment by buying or acquiring under long-term lease nearly twice as much timber acreage as it owned four years ago.

Several million more acres can be expected to be added to the total of managed forests in the years immediately ahead. In the Southeast alone pulpwood requirements will soon be ten million cords more per year than was produced in the entire South as late as 1947, and pulp companies must know where it's all coming from. A 21-man forest industry committee, representing all types of wood-dependent firms, was recently formed in South Carolina toward that very goal—to assure an adequate and permanent supply of timber.

True, there are some industry foresters who still have qualms over the South's readiness to produce the approximately 18 million cords of pulpwood it will need each year. Such hesitancy is understandable, the ambitious expansion coming as it does on the heels of an era of pessimism.

But the new intensity of good forest management is only now beginning to make itself felt. Lumber companies and other forest industries are also buying up more land, while private investors are becoming increasingly interested in acquiring and growing timber for profit. This trend in itself would help to swing the balance against the small woodland owner who has as a class been properly accused of dragging his feet.

It's doing even more, though. The small owner, too, is beginning to respond to a combination of all the educational dinning heaped on him in recent years and the profitable examples he sees about him. Cooperatives are making it easier for the small owner to realize the profit he has a right to expect, while industry cases of covertly encouraging clear cutting are becoming more rare.

The bankers, too, are beginning to wield an influence. *Trees and Bank Accounts*, a recently issued manual of the Agricultural Commission of the American Bankers Association states, "The four and one-quarter million farmers and small investors in land should be alert to the fact that their forest holdings are an important personal and national economic reserve."

This all adds up to a case for optimism in the forest resource picture. And while no one should yet advocate complacency or a realization (yet) of balance between growth and drain, the preponderant evidence would seem to indicate abeyance of "big stick" tactics.

ASHEVILLE, NORTH CAROLINA NAMED SITE OF 77TH ANNUAL MEETING OCTOBER 12-15

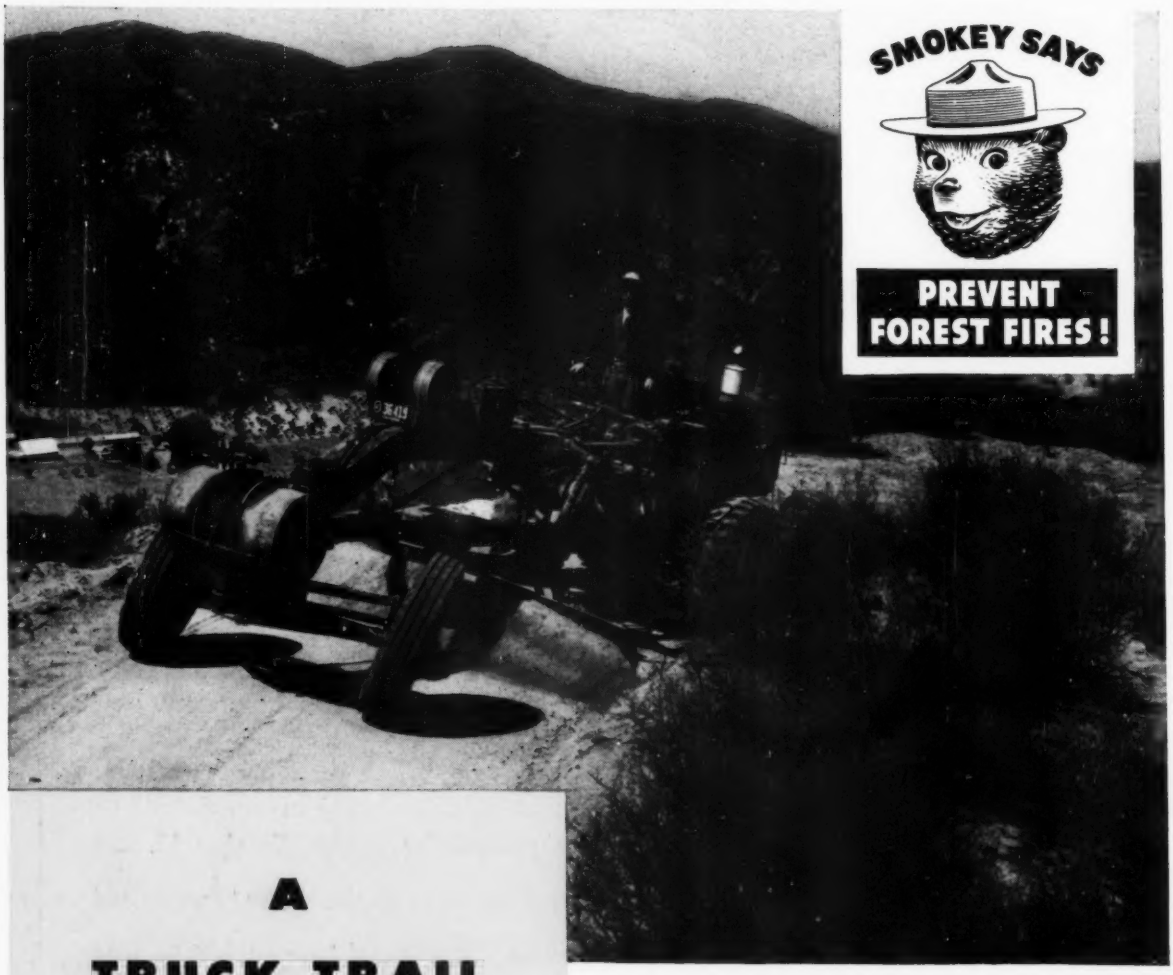
The Joint Annual Meeting of The American Forestry Association and The North Carolina Forestry Association will be held October 12, 13, 14 and 15 in Asheville, N. C. The meeting has been timed to take full advantage of the fall coloring. You and your friends are cordially invited to attend. All are welcome. In addition to timely talks and panel discussions on important conservation issues, there will be several outstanding field trips, including an all day trip to the Coweeta Hydrologic Laboratory, near Franklin, N. C. on October 14.

Registration and an informal gathering are planned for Sunday, October 12. On the morning of October 13 there will be several key talks on the theme "Forests and Water", with a panel discussion in the afternoon. The annual banquet will be held that evening.

Choice of field trips on Tuesday, October 14, and Wednesday, October 15, include: (1) Coweeta Hydrologic Laboratory, (2) Great Smoky Mountains National Park via the Blue Ridge Parkway, (3) Bent Creek Experimental Forest, Biltmore Plantations, and one of the larger industrial plants, and (4) Mt. Mitchell and Biltmore House and Gardens.

Headquarters will be at the Battery Park Hotel, where rates are as follows: $4.00 to $7.00 single and $7.00 to $12 double, European Plan. You are urged to *make reservations today* by writing to

Mr. Don B. Grady, Manager, Battery Park Hotel, Asheville, N. C.



A TRUCK TRAIL ON ITS WAY TO A FIRE

THIS summer or fall, fire-fighting equipment may have to barrel over this truck trail to stop a costly forest conflagration. Every year vast areas of valuable timberlands are destroyed by fires.

So, J. W. Simons of Los Angeles County Fire Department is smoothing the way in Pine Canyon, California, with a "Caterpillar" No. 12 Motor Grader. Mr. Simons, who won the American Forest Fire Medal for Heroism in 1948, likes the way the No. 12 navigates the sharp curves and grades up to 26 per cent in these trails.

"The leaning wheels and loads of power allow me to blade right around the corners—making a smooth, even road where fire trucks need smooth roads," he reports.

"For our type of work, 'Caterpillar' Motor Graders definitely are an outstanding piece of equipment. They're always ready to go when 'go' sometimes means getting out of a mighty hot spot."

"Cat" Motor Graders are as economical as they are dependable. They can be used the year around in every climate and they're constructed for a long life of service. They'll serve you even longer if you give them a few minutes' preventive maintenance daily. In addition "Caterpillar" Dealers always are ready to give you fast, efficient service.

CATERPILLAR, PEORIA, ILLINOIS

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES
TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT